Better Homes and Gardens®

WOOD®

See our 9-issue INDEX Page 43

THE WORLD'S LEADING WOODWORKING MAGAZINE

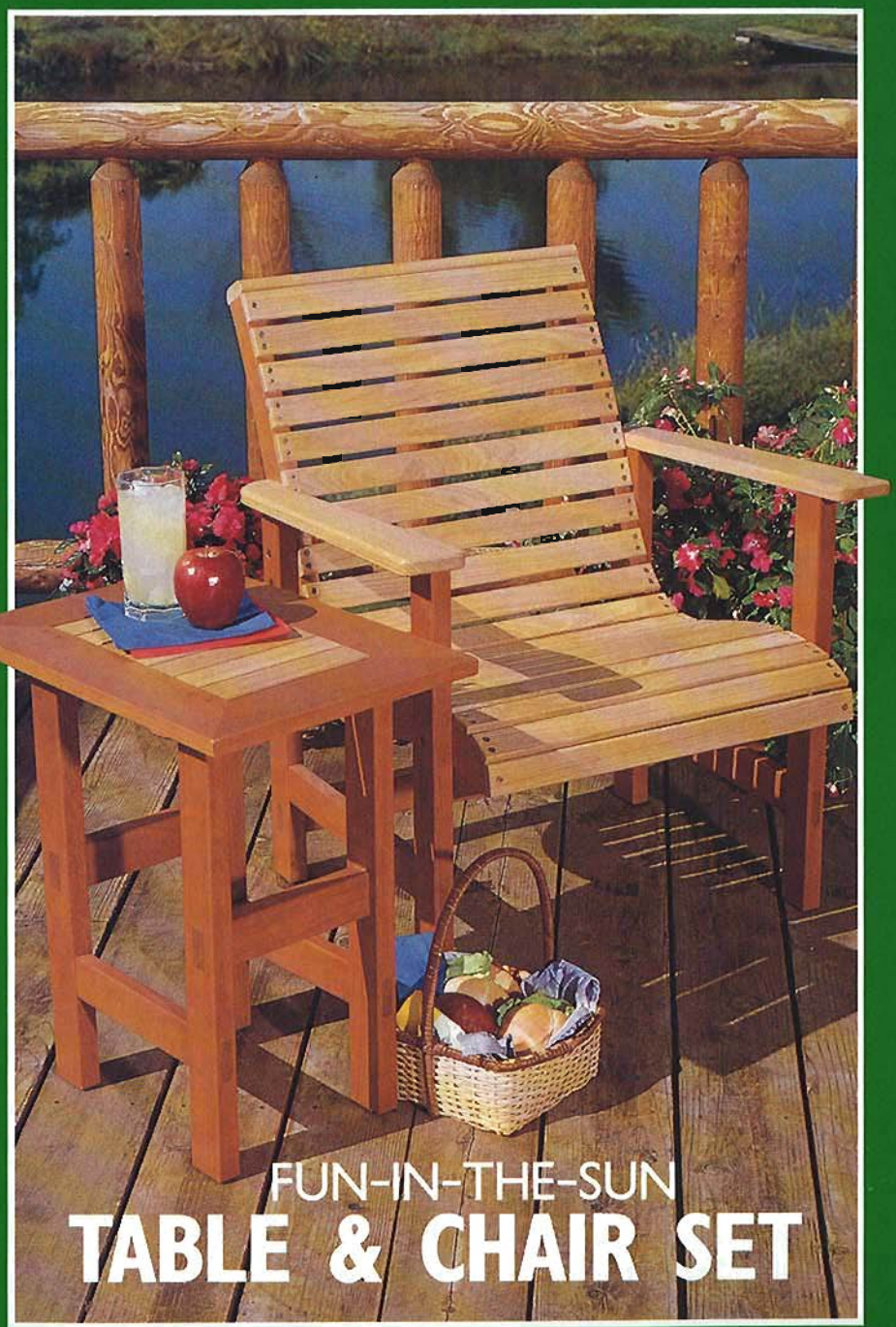
JUNE 1993 • ISSUE NO. 61
Please display until June 7

NEW SKILLS

- HOW TO MAKE LEADED-GLASS PANELS
- BARKROSING
- CLAMPING MITERED CORNERS

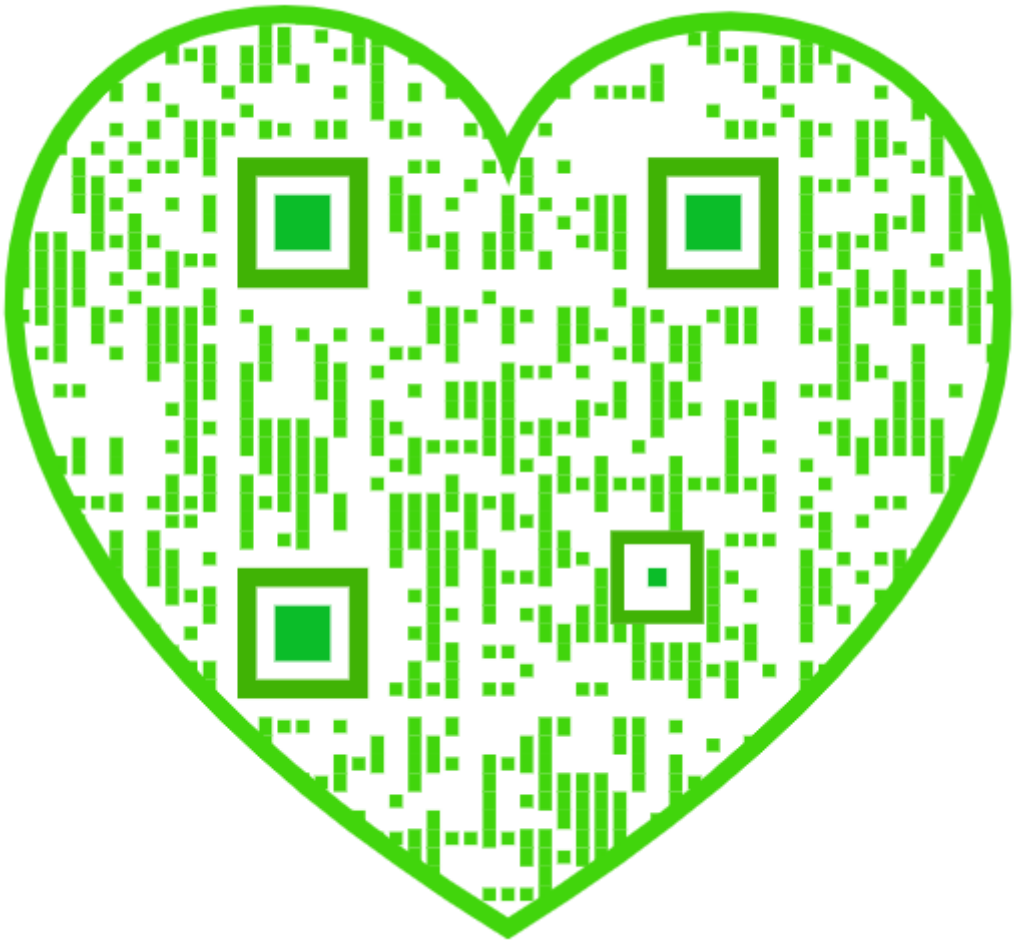
SENSATIONAL PROJECTS

Leaded-glass wall clock
Perfume vial
Snail rocker
Picture frame
Keepsake box
Barn play set



FUN-IN-THE-SUN
TABLE & CHAIR SET

0 71486 14072 6 06 $4.95



Grizzly IMPORTS, INC.

"IMPORTERS OF FINE MACHINERY"

LET'S CLEAR THE AIR!

Newly aware of the dangers of airborne dust, woodworkers in shops of all sizes are investing in dust collection systems. You should, too. These four popular models from Grizzly are extremely efficient and very quiet. So, why take chances with your health? Take advantage of these unbelievably low prices and enjoy a safer woodworking environment.

10th ANNIVERSARY

FREE
4" X 10' HOSE
WITH PURCHASE OF A DUST COLLECTOR!

MODEL G1032
- 1 H.P.
- 2-BAG
- 110 V
- 78 LBS.

ONLY $189.95

MODEL G1028
- 1 H.P.
- 2-BAG
- 110 V
- 125 LBS.

ONLY $265.00

MODEL G1029
- 2 H.P.
- 2-BAG
- 220 V
- 135 LBS.

ONLY $295.00

MODEL G1030
- 3 H.P.
- 4-BAG
- 220 V
- 170 LBS.

ONLY $455.00

PRICES ABOVE ARE F.O.B. WILLIAMSPORT, PA OR BELLINGHAM, WA

DUST COLLECTION ACCESSORIES

DUST COLLECTION BASICS

This incisive new book skillfully guides the woodworker through all the steps necessary in the design and construction of an efficient central dust collection system and tells you what you need to know for easy installation.

MODEL G2525
ONLY $5.95

PLASTIC BLAST GATES

MODEL G1842	3"	$4.95
MODEL G1843	4"	$5.95
MODEL G1844	5"	$9.95
MODEL G1845	6"	$10.95

ALUMINUM BLAST GATES

MODEL G1553	3"	$10.95
MODEL G1571	4"	$13.95

HOSE CLAMPS

MODEL G1795	3"	$.79
MODEL G1796	4"	$.89
MODEL G2484	5"	$.99
MODEL G2485	6"	$1.09

WIRE HOSE CLAMPS

MODEL G2972	2"	$.79
MODEL G2973	3"	$.89
MODEL G2974	4"	$.99
MODEL G2975	5"	$1.19
MODEL G2976	6"	$1.39

FLOOR SWEEP SYSTEM

MODEL G1840 $9.95

T

MODELG1546	3"	$4.50
MODEL G1547	4"	$5.95

Y

MODEL G1551	3"	$4.95
MODEL G1552	4"	$6.95

SPLICE

MODEL G2481	3"	$3.95
MODEL G2482	4"	$4.95

ELBOW — 90°

MODEL G1544	3"	$3.95
MODEL G1545	4"	$4.95

REDUCER

MODEL G2483
Reducer 3" x 2" $3.95
MODEL G1519
Reducer 4" x 3" $3.95

ADAPTOR

(for Shopvac® & Sears®)
MODEL G2551
Reducer 3" x 2-1/2" $4.95

2-1/2" UNIVERSAL DUST PORT

MODEL G2977
4" x 3-5/8" $5.95

UNIVERSAL DUST HOOD

MODEL G1838
7"x 7" $7.95

JOINTER DUST HOOD

MODEL G1839
6-1/2" x 6-1/2" $7.95
MODEL G1841
7" x 8-1/2" $8.95

TABLE SAW DUST HOOD

MODEL G1837
10" x 10" $9.95
MODEL G2480
14" x 14" $11.95

FLEXIBLE HOSE

MODEL G2867	2" x 10'	$9.95
MODEL G1674	3" x 10'	$11.95
MODEL G1678	3" x 50'	$49.95
MODEL G1536	4" x 10'	$14.95
MODEL G2868	4" x 20'	$29.95

93-102

P.O. BOX 2069
BELLINGHAM, WA 98227
Customer Service: (206) 647-0801

ORDERS:
1-800-541-5537

IF YOU LIVE WEST OF THE MISSISSIPPI

MasterCard VISA DISCOVER

IF YOU LIVE EAST OF THE MISSISSIPPI

2406 REACH ROAD
WILLIAMSPORT, PA 17701
Customer Service: (717) 326-3806

ORDERS:
1-800-523-4777

THE EDITOR'S ANGLE

HOW WE INVOLVE MANUFACTURERS IN OUR TOOL-TESTING PROCESS

Above, **Giorgio Pozzo (right) and Jim Brewer (middle) from Freud talk with Bob McFarlin, one of *WOOD* magazine's product testers, about our saw blade testing.**

Of all our articles in *WOOD*® magazine, none get a closer look from both readers and manufacturers than our tool articles. Small wonder! For many of our readers, our advice on this or that tool category represents their single best source of information available. And the manufacturers, not surprisingly, spend time poring over the test results to see if we gave their tools a fair shake.

Usually, when products/techniques editor Bill Krier lets a company know that we want to test one or more of its tools, our company contact sends us the tool(s), along with any information he thinks we might need. Then we test the product, and if we come up with something problematic, Bill calls back and asks the contact person to respond to our concern, and to supply more information if needed. We feel we owe manufacturers this courtesy.

Too, sometimes a company will send someone to Des Moines to demonstrate one or more of their products and explain features to Bill and other staffers. Such visits always tend to be educational for us. Recently, for example, the folks from Freud flew in to talk about circular saw blades and look in on our testing procedures. They actually saw us test their carbide-tipped saw blades for an issue 63 tool review.

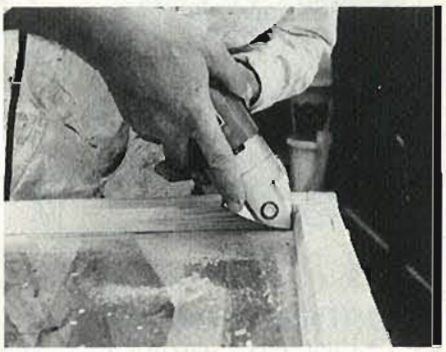
You might wonder at this point: Do companies that represent their product in person have an edge on other companies when it comes testing time? Absolutely not! Do we allow manufacturers to preview our articles prior to publication? No way! What really counts, in the final analysis—and what you read about in *WOOD* magazine—is the quality of the product and how well it performs in our testing. For more, check out Bill Krier's article beginning on *page 30.*

Larry Clayton

Photograph: Bill Krier

SUBSCRIPTION SERVICE: For a change of address it is best for you to directly contact your local Postmaster who then will notify us. For any other service on your subscription, please write *WOOD* Customer Service, P.O. Box 55050, Boulder, CO 80322-5050 (enclose a recent label from your magazine for better service). Or you may phone toll-free 800-374-9663.
EDITORIAL MAILING ADDRESS: *WOOD* magazine, 1912 Grand Ave., Des Moines, IA 50309-3379. WE CARE!

Fein "Triangle" Sander Eliminates Hand Sanding
Now At New Low Price!



With the NEW Fein "Triangle" Sander, time consuming, sore finger, bloody knuckle sanding is a thing of the past.

Imagine using a power tool to sand all those areas where before, you had to fold up a piece of paper and "finger sand."

You know all those difficult to sand areas; inside & outside edges, closed corners, coves, spots, glue marks, seams, moldings, intricate profiles and so on. **With the Fein "Triangle" Sander, you can sand right up to, into and along edges & corners without dulling the edge or altering the profile.**

Here's how it works.

Unlike ordinary sanders, the Fein "Triangle" Sander doesn't rotate. Instead it "oscillates" (a back and forth movement) at a blurring 20,000 times a minute.

New Low Price

We've gotten the price down as low as possible, with a new list price of only $275! (It was $365.00 in 1992).

The Fein "Triangle" Sander takes the drudgery out of hand sanding and frees up hours of your valuable time.

It's easy to get more information, simply call:

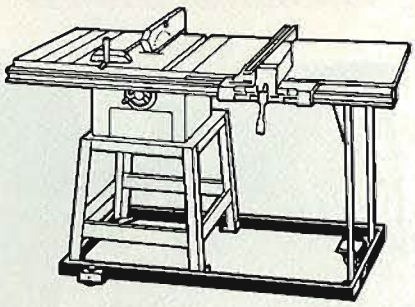
1-800-441-9878

FEIN Power Tools Inc.
3019 W. Carson St.
Pittsburgh, PA 15204
(412)331-2325

©Fein Power Tools, Inc. 1993

Put Your Entire Shop On Wheels

MOBILE MACHINE BASES



- Increase your working area
- Store machines when not in use
- Hundreds of models available
- Precision welded steel construction
- Three 2-1/2" wheels for stability
- Dual wheel locks provide positive positioning
- Lifetime warranty

Call for a free catalog

MADE IN USA

HTC Products, Inc.
120 E. Hudson • P.O.Box 839
Royal Oak, Michigan 48068-0839

(800) 624-2027

Buy DIRECT from the Manufacturer and... SAVE!

NEW!

White Non-Loading SANDING BELTS

The Ultimate Woodworking BELT.

Buy 1-Doz. BELTS...Get 12 FREE!

1"x 30" (12 + 12 Free)	$21.50	4"x 21" (12 + 12 Free)	$28.95
1"x 42" (12 + 12 Free)	21.95	4"x 24" (12 + 12 Free)	29.95
3"x 21" (12 + 12 Free)	24.95	4"x 36" (12 + 12 Free)	37.95
3"x 24" (12 + 12 Free)	25.95	6"x 48" (6 + 6 Free)	46.95

(Available 60x, 80x, 100x, 120x, 150x, 180x). Try our NEW White Non-Loading Cloth in Discs, Wide Belts, Edge & Stroke Belts!

NEW! **Hook & Loop SANDING DISCS**

Buy any 3 (50 pks)...Get 4th pack FREE.

	80 GRIT	100 To 400 GRIT
4½" (8 hole)	$13.95	$12.95
5" (5 hole)	13.95	12.95
5" (8 hole)	13.95	12.95
6" (6 hole)	16.95	15.95
6" (8 hole)	16.95	15.95

• All grits in solid packs of 50.
• Coarse grit sizes are available.

TOLL FREE 1·800·428·2222

• S. & H. – $4.75
• PA residents add 6% sales tax.

INDUSTRIAL ABRASIVES CO.
643 N. 8th ST. • P.O. BOX 14955
READING, PA 19612

Better Homes and Gardens®

WOOD®

THE WORLD'S LEADING WOODWORKING MAGAZINE

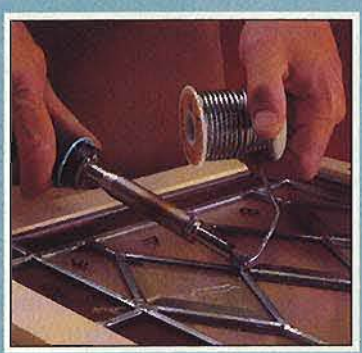
This issue's cover wood grain: sycamore *Cover photograph: John Hetherington*

JUNE 1993 ISSUE NO. 61

CRAFTSMAN CLOSE-UP
Wonderful willow works 23
A native of Punjab, India, Tehal Virk has discovered the American dream making and selling magnificent willow furniture in his new home, Belgium, Wisconsin.

TURNING
Jewel of a vial 28
Graceful contours, beads, and a spired top hint at the beauty of this perfume bottle. An inserted glass vial serves as the actual container.

How *WOOD* magazine tests tools 30
Look behind the scenes at how we conduct our tool comparisons, and meet the no-nonsense crew in charge of this demanding responsibility.



SHOP-TESTED TECHNIQUES
Leaded-glass panels 32
Learn about the tools, supplies, and processes used in constructing beautiful panels of leaded glass. You'll find this newly acquired skill a perfect fit for numerous woodworking projects.

NOW YOU CAN BUILD IT
Worth-every-minute wall clock 39
Put your leaded-glass skills to work by building this outstanding oak pendulum clock. Find the complete plans and our clock movement source inside.

Cumulative index—issues 50 to 58 43
Looking for the Shaker tall chest from a few issues back? Locate it and other stories quickly in this handy nine-issue resource.

DEVELOP YOUR SHOP SKILLS
How to clamp tricky mitered moldings 47
With this fail-safe process, you're only four steps away from making accurately mitered pieces join seamlessly.

Fun-in-the-sun furniture 48
Celebrate summer by making this handsome outdoor table-and-chair combo. Then, enjoy your handiwork with a cool, refreshing beverage.

CARVING
Barkrosing 54
Discover a decorative technique developed by old-world craftsmen for embellishing wooden spoons, bowls, and other household items.

Patterns, patterns, everywhere 56
Ever see a magazine photograph or other image that would make a great scrollsaw pattern? Here's how to put it to good use.

Smiley, the rocking snail 58
Add this happy-go-lucky mollusk to your playroom, and then watch your child's eyes light up as he or she takes it for a romp.

Tracking down good wood 62
Find out where the better North American woods hail from and why geographic origin makes a difference.

CRAFT SHOP
Olympian display 64
Show off your favorite faces in a classic photo frame.

Beauty and the box 66
Blend contrasting woods when making this captivating container.

Little red tote barn 68
Cows, horses, and fence sections all fit in this kid-pleasing carryall.

SHORT-SUBJECT FEATURES

Editor's Angle	1	Great Ideas For Your Shop	16
Talking Back	6	Ask *WOOD*	19
Tips From Your Shop (And Ours)	10	Products That Perform	76
		Finishing Touches	88

Complement Your Woodworking With Glass

Glass Patterns Quarterly

magazine brings you more than a dozen projects in every issue with full-size patterns right in the center of the magazine.

GPQ features the best designers in the industry and offers great patterns for every level of expertise.

Each issue also delivers step-by-step instructions, how-to photos, full-color photographs of completed projects, complete materials listings, color suggestions and more.

Subscribe Now!

Send me: ☐ One year for only **$18 (4 issues)**
☐ Two years for only **$32 (8 issues)**
☐ New Subscription ☐ Renewal

Ky residents add 6% state sales tax. Outside U.S. add $5. Please pay in U.S. currency with an international money order or a check drawn on a U.S. bank.

Name

Company

Address

City State Zip

Check one: ☐ Check ☐ Money Order ☐ Visa ☐ MasterCard

Remit subscription information to:

Glass Patterns Quarterly
P. O. Box 131 • Dept. WOOD 5/93
8300 Hidden Valley Rd., Westport, KY 40077
502-222-5631 • Fax 502-222-4527

Please allow 30 days for delivery of first issue.

HARDWOODS

EXOTIC & DOMESTIC
OVER 75 SPECIES
LUMBER • PLYWOOD • VENEERS
TURNING SQUARES & BLANKS

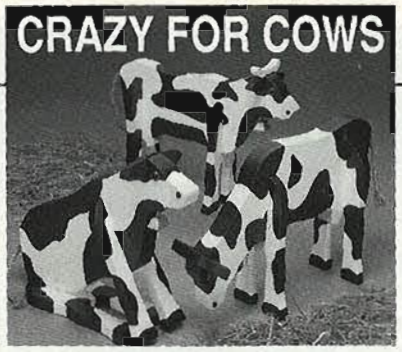
BOOK OF FINE HARDWOODS
$16.00 ppd in Cont US
Provides geographic source, description, uses and availability for over 200 woods. Over 70 woods shown in full color. Charts compare physical properties. 60pgs.

COLLECTORS SAMPLE KIT
With BOOK OF FINE HARDWOODS $51.00*
30 GORGEOUS WOODS
Exotic & Domestic from Around the World
1/2" X 3" X 6" Sanded Finish
$39.00 *ppd in Cont US
Ideal for Collectors • Schools • Craftsmen • Cabinet & Furniture Makers • Architects • Designers

PURPLE HEART Deep true purple
IVORYWOOD White to pale yellow
BRAZILIAN CHERRY Salmon red to orange brown
***Your Choice, ONLY* $3.99**/bd ft
20 BD FT MINIMUM, MIX OR MATCH, 3"–10" WIDE, 3'–7' LONG 4/4 ROUGH THICKNESS, SURFACED 2 SIDES
FOB PHOENIX

WE SHIP WORLDWIDE
1-800-423-2450
T.M. WOODWORKERS *Source*
5402 S. 40th Street • Phoenix, AZ 85040
602-437-4415

CRAZY FOR COWS



These clever barnyard buddies are a sure bet to bring lots of smiles! You get **FULL SIZE** patterns for making all three projects shown. Heights range from 11" to 15" Made from 3/4" and 1-1/2" thick stock. Order hdw. parts below.

#W1000 Take-Apart Holstein Plan
..... **$7.99/SET**

Take-Apart Holstein Hardware Parts

This hardware parts package includes the eyes, nostrils, cowbells, screw eyes, and rope for three Holsteins. Project plan, wood, and paint not included.

#3400 Take-Apart Holstein Hdw Parts.....**$5.37/PKG**

HOW TO ORDER: List quantity, part number, item, price & total of order. Include $4.95 shipping & handling per order. MN residents add 6.5% sales tax. Mail check or money order. **Credit card customers call TOLL FREE 1-800-441-9870.**

MEISEL HARDWARE SPECIALTIES
P.O. BOX 70W6 MOUND, MN 55364

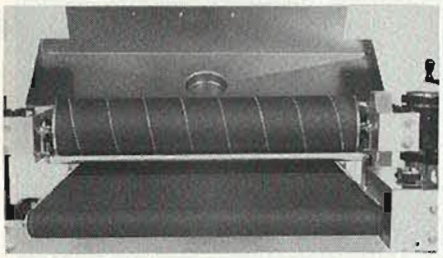
WOOD PEN KITS

MAKE YOUR OWN PENS, PENCILS AND MORE!

Get started making your own pens!
STARTER PEN KIT $29.95 PPD.
Includes: Turning Jig for your lathe (requires drill chuck for mounting), 5 Pen Kits, 5 Exotic Wood Blanks.
Send $2.00 for our 56 page color catalog of woodturning supplies and accessories. Refunded with order.
Craft Supplies USA
1287 E. 1120 S. Provo, UT 84606
Phone 801 373-0917

YOU CAN'T AFFORD
to waste valuable time
Especially when
YOU CAN AFFORD

A PERFORMAX DRUM SANDER



Our wide range of models offer an affordable solution for every budget and need. Prices range from $300 for a 22" drum to $3495 for a 37" dual drum.

Select our 22" drum with an open-sided stock feeding area for 44" wide sanding in two passes, or our 25" or 37" single or dual drums to flawlessly finish without time-consuming hand sanding.

Even at our affordable prices our quality is unmatched. See Performax at the dealer nearest you. Over 100 stocking dealers nationwide. Call or write today.

1-800-334-4910 or (612) 895-9922
or write: PERFORMAX PRODUCTS, WD09
12211 Woodlake Drive, Burnsville, MN 55337

Better Homes and Gardens®
WOOD®
THE WORLD'S LEADING WOODWORKING MAGAZINE

June 1993 • Vol. 10, No. 4 • Issue No. 61

Editorial/Art Staff
Editor **LARRY CLAYTON**
Managing Editor **JIM HARROLD**
Art Director **C. L. GATZKE**
Design Editor **JAMES R. DOWNING**
Senior Editor **PETER J. STEPHANO**
How-To Editor **MARLEN KEMMET**
Products/Techniques Editor **BILL KRIER**
Special-Interest Editor **LARRY JOHNSTON**
Associate Art Director **PERRY A. McFARLIN**
Graphic Designer **CHERYL A. CIBULA**
Project Builder **JAMES E. BOELLING**
Production/Office Manager **DARLENE REYNOLDS**
Administrative Assistant **MARGARET CLOSNER**
Secretary **ROSEMARIE BURCH**

Technical Illustrator **KIM DOWNING**
Technical Consultants: Product Testing **GEORGE GRANSETH, BOB McFARLIN.** Products That Perform **STEVE OSWALT.** Carving **HARLEY REFSAL.** Projects **CHUCK HEDLUND.** Collectible Tools **PHILIP WHITBY.**

Publisher **WILLIAM R. REED**
Advertising Director **CHRIS W. SCHRAFT**
Advertising Representatives **CRAIG KAPLAN, BRENDEN DELANEY, VICTORIA PELCYGER**
Promotion/Research Manager **EILEEN SULLIVAN**
Advertising Assistant **TARA COLES**
Advertising/Marketing Services Manager **SIGRID FOLKERS**
Publishing Assistant **JACKIE MASON**
ADVERTISING OFFICE: 750 Third Avenue, New York, NY 10017. Phone 212/551-6903.

Marketing Manager **DONNA BREHM**
Circulation Manager **ALAN BRUSH**
Business Manager **JANET NELSON**
Newsstand Circulation Director **MICHAEL SENIOR**
Production and Technology Director **ROBERT C. FURSTENAU**

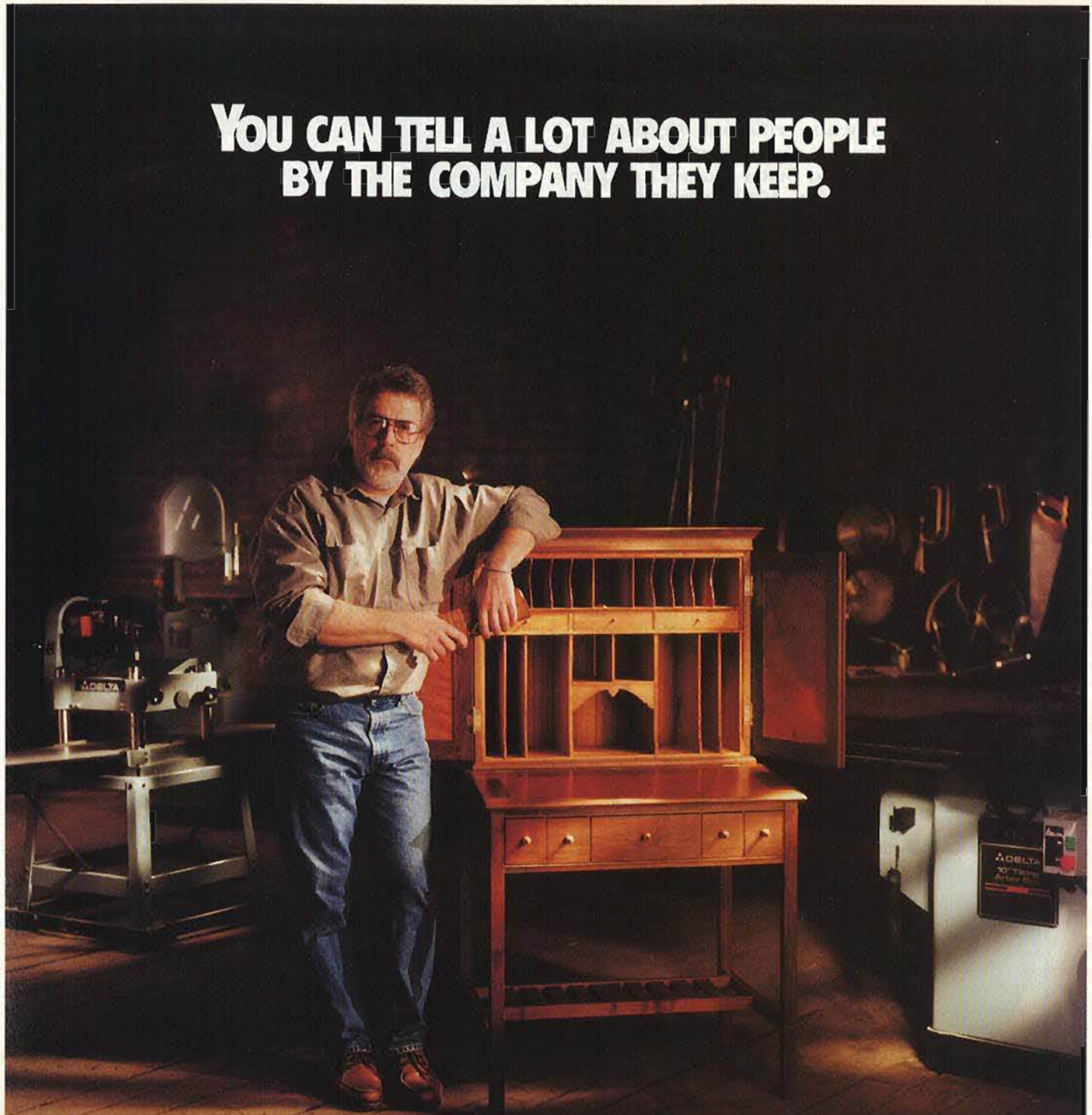
Magazine Group Officers
President **WILLIAM T. KERR.** Vice Presidents/Publishing Directors **MYRNA BLYTH, CHRISTOPHER LEHMAN, CHRISTOPHER LITTLE, ROBERT MATE, JERRY WARD.** Vice Presidents, Better Homes and Gardens **DAVID JORDAN, JERRY KAPLAN.** Vice President, Operations **DEAN PIETERS.** Vice President, Finance **MAX RUNCIMAN.** Vice Presidents, Marketing **WILLIAM MURPHY, CLEM SEVDE.**

Corporate Officers
Chairman of Executive Committee **E.T. MEREDITH III**
Chairman of the Board, President, and Chief Executive Officer **JACK D. REHM**
Group Presidents: Books **JOSEPH J. WARD.** Broadcasting **PHILIP A. JONES.** Magazines **WILLIAM T. KERR.** Real Estate **ALLEN SABBAG.**

Better Homes and Gardens' *WOOD*® (ISSN-0743-894X) is published nine times a year in January, February, April, June, August, September, October, November, and December by Meredith Corporation, 1716 Locust St., Des Moines, IA 50309-3023. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. Better Homes and Gardens trademark registered in Canada and Australia. Marca Registrada en México. **ONE-YEAR SUBSCRIPTION PRICES:** U.S. and its possessions, $24.97; Canada, $34; other countries, $43. **POSTMASTER:** Send address changes to *WOOD*, P.O. Box 55050, Boulder CO 80322-5050.

©COPYRIGHT MEREDITH CORPORATION 1993. ALL RIGHTS RESERVED. PRINTED IN U.S.A. Canadian GST Reg. #R123482887.

YOU CAN TELL A LOT ABOUT PEOPLE BY THE COMPANY THEY KEEP.



We're regarded as "good company" in many of the finest shops anywhere.

We've worked along side the best craftspeople in the country for well over 70 years now. Been privileged to plane and saw and join literally hundreds of thousands of miles of the most beautiful stock you'd ever want to lay eyes on.

We've shared in the joy of creating excellence. Spent months working on large production runs. Experienced moments of quiet pleasure, crafting one-of-a-kind treasures.

You might say we're a company who gets seen with all the right people. People who know full well that the work coming out of their shop is only as good as the equipment they've put into that shop.

Delta woodworking tools. For those of you who insist on quality.

Call toll free for the name of your nearest Delta dealer. Delta International Machinery Corp., Pittsburgh, PA, 800-438-2486. In Canada, call 519-836-2840.

Building On Tradition

DELTA

A Pentair Company

Ronald Layport designs and builds one-of-a-kind furniture.

We're pleased to be underwriters of The New Yankee Workshop and The American Woodshop on public television.

TALKING BACK

Print this article

We welcome comments, criticisms, suggestions, and even compliments. Send your correspondence to: Talking Back, Better Homes and Gardens® *WOOD*® magazine, 1912 Grand Ave., Des Moines, IA 50309-3379.

Reindeer light up the night

I ordered your plans for the [two] reindeer last year and completed them. After painting them white, I drilled holes and inserted white Christmas lights in the antlers. The weight of the lights makes the [reindeer] heads sway in the wind and looks awesome! Thanks for the wonderful project.

Karen Dattalo, Elmwood Park, Ill.

Thanks, Karen. You might be interested to know that our Christmas holiday decoration plans now include a Santa, sleigh, and/or the reindeer. The price for one plan is $9.95. Two plans are $18.95, and three plans are $26.95. Be sure to write the name of the plan or plans you are ordering in the lower left hand corner of your check. To order, send either check or money order to:

Better Homes and Gardens® WOOD® magazine
Project Plan Sales
P.O. Box 9255, Dept. W4
Des Moines, IA 50306

WOOD a must-read

Your publication was recommended by a fellow woodworker as being a must if you enjoy woodworking of any kind. He wasn't wrong. I read your magazine from cover to cover and have enjoyed doing several of the projects. I also make use of the advertisers, contacting them for several woodworking items. I look forward to being a regular subscriber for many years to come and plan to expand my hobby in a few years as I move into retirement.

—Fred Rankin, Northville, Mich.

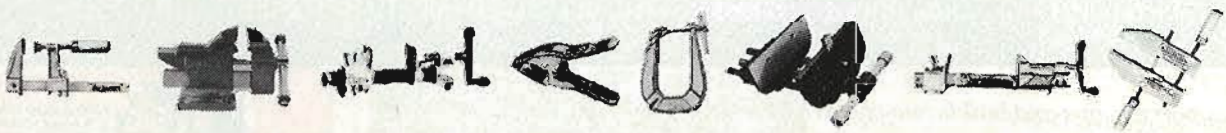
Continued on page 8

We've helped hold it together... Since 1903

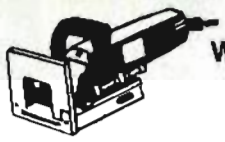
"Jorgensen"®
"Pony"®
'Adjustable'™

Quality in our products... dedication in our service. We've held to these commitments just as you've held up our Clamps and Vises as your standards to each new generation since 1903. We'll continue to hold consistently to our traditions of excellence.

Write for our Catalog SEND $1.00
Adjustable Clamp Company
410 N. Ashland Avenue, Chicago, IL 60622



QUALITY TOOLS



for Woodworking & Laminating

- Virutex® Joiner & Biscuits (Rated Top Notch, Dec. '92 WOOD® Mag.)
- Carbide Bits & Cutters
- Slitters & Planers
- And many other Products

Catalog $1.00

Practical Products Co.
3925 Virginia Ave.
Cincinnati, Ohio 45227
Tel: 513/561-6560

Wood-Mizer® *World's Largest Manufacturer of Portable Sawmills*

*Models from $6995!**

Own a Sawmill!

1-800-553-0219

32-Page Full-Color Catalog $2.00
Business Profitability Booklet $2.00
66-Minute Demonstration Video $10.00
Mastercard or Visa Accepted
**Shown with optional trailer*

Wood-Mizer Products, Inc.
8180 West 10th Street, Dept. GQ75
Indianapolis, IN 46214-2400

5" or 8"

Supergrit®
Random Orbital Sander Discs
5" White PSA 180 Grit $15.00/100

PREMIUM QUALITY BELTS: BEST RESIN OVER RESIN, "X" WEIGHT 10/BOX

1x30 or 1x42	$ .70 ea.	4x21 or 4x21¾	$ .95 ea.
2½x16	.75	4x24	1.05
3x18	.79	4x36	1.30
3x21	.80	6x48	3.00
3x24	.85	6x89	5.60

ADHESIVE CLOTH DISCS: BEST RESIN OVER RESIN, "X" WEIGHT

5" Diameter	$ .80 ea.	9"	$ 1.80 ea.
6"	.90	10"	2.00
8"	1.40	12"	2.50

Prices quoted 80 grit, other grits available

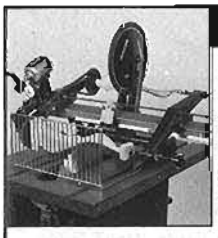
PREMIUM 9"x11" SANDPAPER SHEETS 100/PACK

WATERPROOF-BLACK S.C. • 100 Grit $28 • 180 Grit $25 • 220-1200 Grit $23
NO LOAD-WHITE S.C. • 80 Grit $30 • 120 Grit $26 • 150-400 Grit $20

A/O CABINET-BROWN or GARNET-ORANGE

40 Grit	50 PK	$18.00
50-60	50 PK	$14.00
80 Grit	50 PK	$13.00
100,120,150	100 PK	$22.00
180, 220	100 PK	$19.00
320 Grit	100 PK	$16.00 SALE
A.O. SAMPLER 8 grits 50-320	100 PK	$20.00 SALE

RED HILL CORP., P.O. BOX 4234, GETTYSBURG, PA 17325
Free Freight to most areas-$4.00 Handling
(800) 822-4003 Free 20 page catalogue



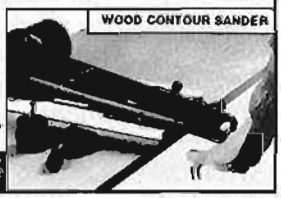
ROTO/CARVE®

ENGINEERED FOR PRODUCTION With ROTOCARVE & your table saw make wood shapes fast, accurately, & profitably. Pattern duplicated in minutes.
- Chair Legs • Bed Posts
- Axe Handles • Etc.
- Manual or Automatic Drive

ROTO CARVE 2754 GARDEN AVE.
JANESVILLE, IA 50647 • 319-987-2511

Video $30

- Sander 2 1/2" x 60" Belt
- Horizontally Mounted
- Clear Working Area
- Soft Contact Wheels
- Quick Change of Belts, and Contact Wheels



ROTO/SAND®

Quality
MECHANISMS
For Making
WOODEN BARREL

- Pens
- Pencils
- Roller Balls
- Fountain Pens

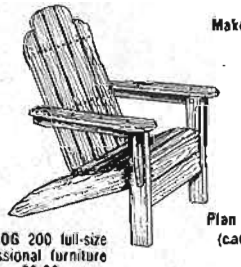
plus other related items.

Wholesale/Retail

Call or Write:

BereaHardWoods.co.
6367 Eastland Rd. Brookpark, Ohio 44142
216-234-7949 *Master Card/Visa*

Full-Size Professional Plan
ADIRONDACK CHAIR



Make this classic American design. Our special version may be folded for storage by using ordinary hardware available at your local store. Be ready for Summer and get your plan now!

Plan #700 ..... $14.00
(catalog free with order)

CATALOG 200 full-size professional furniture plans — $3.00

FURNITURE DESIGNS, INC., Dept. BA-53
1827 Elmdale Ave., Glenview, IL 60025
(708) 657-7526

BLACK & DECKER. Industrial

DRILLS

1166 3/8" 0-2500rpm Holgun $62

1167	3/8" VSR Holgun w/Keyless chuck	$68
1180	3/8" 0-1200rpm Holgun	103
1311	1/2" 0-600rpm Holgun	123
1312	1/2" 0-900rpm Holgun	123
1349-09	2 speed Timberwolf Kit	279
1350-09	2 speed Timberwolf Drill	264

SAWS

2694	7-1/4" Super SawCat w/brake	145
3158K	VS Orbital Jig Saw Kit	134
3105	Dual range VS CutSaw Kit	134
1703-1	10" Miter Saw w/carbide blade	178
3660	12" Miter Saw	309

3680 12" Compound Miter Saw $349

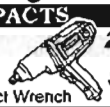
SCRUGUNS

2037	0-4000rpm VSR drywall	98
2038	0-2500rpm VSR drywall	98
2057	0-2500rpm Power unit	109
2059	0-2500rpm Tek® gun	117

2660 $79 0-4000rpm Drywall Scrugun®

IMPACTS

2670 w/pin 1/2" Impact **2674 w/ring $139**



2225	3/4" Impact Wrench	399

ROUTERS

2720 1.5 hp Router 1/4" collet $129

3265	Laminate Trimmer	$ 145

GRINDERS

2750 4-1/2" 10,000rpm Grinder $79

4252	5" 10,000rpm Grinder	108
4074	7" 6000rpm Grinder	119
4075	7"/9" 5000rpm Wildcat™	139
4076	7" 6000rpm Wildcat™	139

CORDLESS DRILLS

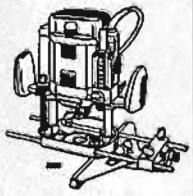
1921K	9.6V 1850rpm Cordless Kit	$159
98003	9.6V battery for 1921	45
2661K	13.2V 3/8" KDDIAK® Kit	249
98051	13.2V Univolt™ battery	45
2663K	9.6V 2 spd VSR Kit	137

2664K 9.6v Cyclone™ Drill Kit $146

2764K	w/Keyless chuck	157
98048	9.6V Univolt™ battery	32
2665K	12v Cyclone™ Drill Kit	158
2765K	w/Keyless chuck	169
98050	12V Univolt™ battery	39
98014	Univolt™ universal charger (fits all 9.6,12,13.2V batteries)	49
98018	15 min. Univolt™ charger (charges any battery in 15 min.)	182

Elu™

3338 2-1/4 Hp Plunge Router $249



3328	3-1/2 Hp Router (1/2" collet)	$269
3380	Biscuit Joiner/Spliner Kit	259
3379K	Biscuit Joiner Kit	229
2717	7"/9" 2 speed Polisher	167

2721 1-1/2 hp Router (1/2" collet) $139

40902	1/4" Collet	$25

ACCESSORIES

14765	25pc Bullet Drill bit set	$55
17127	7 pc Brad Point Drill bit set	15

63-717	7-1/4" x 18 tooth Rip	$ 5.95
63-737	7-1/4" x 24 tooth Combo	7.95
63-757	7-1/4" x 40 tooth Finish	12.95
73-759	8-1/4" x 40 tooth Finish	19.95
73-770	10" x 60 tooth Finish	29.95

NEW ULTRA™ PIRANHA

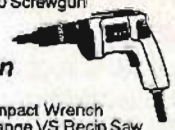
73-970	10" x 60 tooth Finish	52.95
73-976	12" x 60 tooth Finish	59.95
73-984	15" x 80 tooth Finish	89.95

DEWALT®
High Performance Industrial Tools

DW682K Biscuit Joiner $219

DW100	3/8" 0-2500 rpm Drill	$ 64
DW102	3/8" 0-1200 rpm Drill	89
DW130	1/2" 600 rpm Spade Handle Drill	138
DW250	0-4000 Screwgun	87

DW254 0-2500 Screwgun $87



DW290	1/2" Impact Wrench	149
DW304K	dual range VS Recip Saw	129
DW306K	multirange VS Recip Saw	146
DW318K	VS Orbital Jig Saw Kit	134

DW357 7 1/4" Circular Saw $109

DW402	4-1/2" Mini Grinder	79
DW411	1/4 sheet Finish Sander	52
DW870	14" Chop Saw	189
DW944K	9.6V Cordless Drill Kit	148
DW945K	12V Cordless Drill Kit	165
DW946K	12V Cordless Hammer Drill	179
DW947K	13.2V Cordless Drill Kit	208

DW610 1-1/2 HP Router (1/4 & 1/2" Collets) $145

USE VISA, MC, DISCOVER
FREE SHIPPING on orders over $50.
Within continental 48 states, HI and AK extra.
Sales limited to stock on hand.
Be sure to see our other add in this issue

ABBEY TOOLS
1-800-225-6321

1132 N. MAGNOLIA, ANAHEIM CA. 92801
OPEN 8-5:30 WEEKDAYS 9-2 SATURDAY
Calif. residents add 7.75% state sales tax
SERVING YOU FOR OVER 15 YEARS
Prices subject to change without notice
Be sure to see our other add in this issue

FORREST

The World's Finest Dado Head Clean Cuts All Your Grooves!

Of 29 dado sets tested by WOOD® Mag.

"Only the Forrest Dado-King earned 'Superior' ratings in every category."
Better Homes and Gardens WOOD, Oct., 1991, p. 60

"No tearout on all five woods tested"
(including melamines and oak/birch plys)*

BEST OF 32 SETS TESTED!

"Forrest Manufacturing Co. makes the only dado set with a negative hook on all its teeth, including chippers. This effectively makes the teeth cut 'up' into the wood, even when used on a tablesaw. It was the only set that cut the oak-veneered plywood without tearout and it also gave a perfectly flat bottom with a discreet little scribe."* *Jim Puterbaugh*
*See *Fine Woodworking*, July/August, 1991, pg. 59

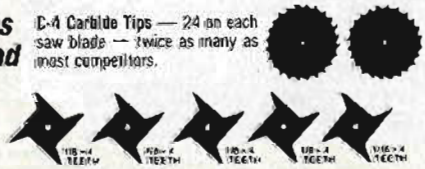
- **NO SPLINTERING—** cross-cutting oak, ply veneers and melamine.
- **PERFECT FLAT-BOTTOM GROOVES—** not staggered steps or round bottoms like a wobble-dado leaves!
- **CUTS IN ALL DIRECTIONS—** rip, cross-cut, miter, any depth.
- **CUTS ALL SIZED GROOVES—** ⅛" thru 13/16" in 1/16" increments. (Set of .005" plastic adjusting shims included).
- **SUPER-HARD CARBIDE—** gives up to 300% longer life, especially good on ply woods and abrasive particle-boards.

TRIABLE & RETURNABLE
for full cash refund if not completely satisfied.

Here is why this great Dado Head has no equal!

C-4 Carbide Tips — 24 on each saw blade — twice as many as most competitors.

C-4 Carbide Tips — 4 on each chipper, with special face hooks.



SPECIAL SALE! 10% OFF!
8"-5/8" Bore List $299/**SALE $269**
10"-5/8" Bore List $362/**SALE $325**
Mention WOOD mag for extra bonus.

Dealer Inquiries Welcome.

BUSINESS OPEN ACCOUNTS AVAILABLE

FORREST MANUFACTURING COMPANY, INC.
461 River Road, Clifton, N.J. / 07014
TO ORDER PHONE TOLL FREE!
(or inquire) **1-800-733-7111**
(In N.J. 201-473-5236) FAX: 201-471-3333

We honor Amex, Visa & Master Card, Money Orders, Personal Checks and COD's. TO ORDER BY MAIL-clip ad, circle choices and enclose payment. Specify Dept. WD when ordering for bonus.

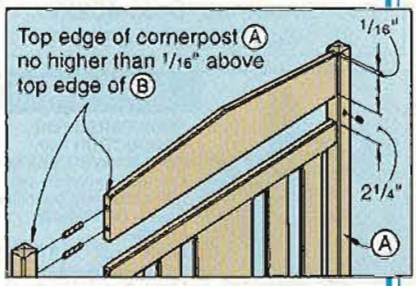
TALKING BACK

Continued from page 6

Crib safety alert!

We've received several letters from readers pointing out a potential safety hazard in our baby crib (February 1993 issue). The corner posts (A) are too high above the top edges of the top rails (B). The posts in our crib project 1⅛" above the top rails.

The regulations we received from the U.S. Consumer Product Safety Commission (USCPSC) do not mention this requirement. After a tip from a reader, we learned that the Juvenile Products Manufacturers' Association ammended their voluntary standards to allow no more than 1/16" projection above the top rail. (See the corrected drawing.) The USCPSC supports that recommendation although it is not part of their written standard.



If you've already built the crib, or are planning on building one, trim 1 1/16" from the top end of the corner posts. We appreciate our readers informing us of this important amendment.

Biscuits soak up moisture

I have owned and used a Virutex 0-81 ever since they came on the American market. Biscuit joinery surpasses dowel joinery in many ways, but is not trouble free. Biscuits do not stay at their compressed thickness in the changing humidity of a nonhumidity-controlled shop. This can cause problems, especially if you've inserted a biscuit in a slot and have waited several days to join into the mating slot. Removing the offending biscuit can be a trying experience.

—Tom Moore, Clarksville, Va.

Sticky biscuits can be prevented, Tom. First, don't insert biscuits until you are ready to join the two pieces. We can think of no reason for doing so. Second, always store the biscuits in an airtight container. A lidded, airtight, plastic container or Ziploc resealable bags work great.

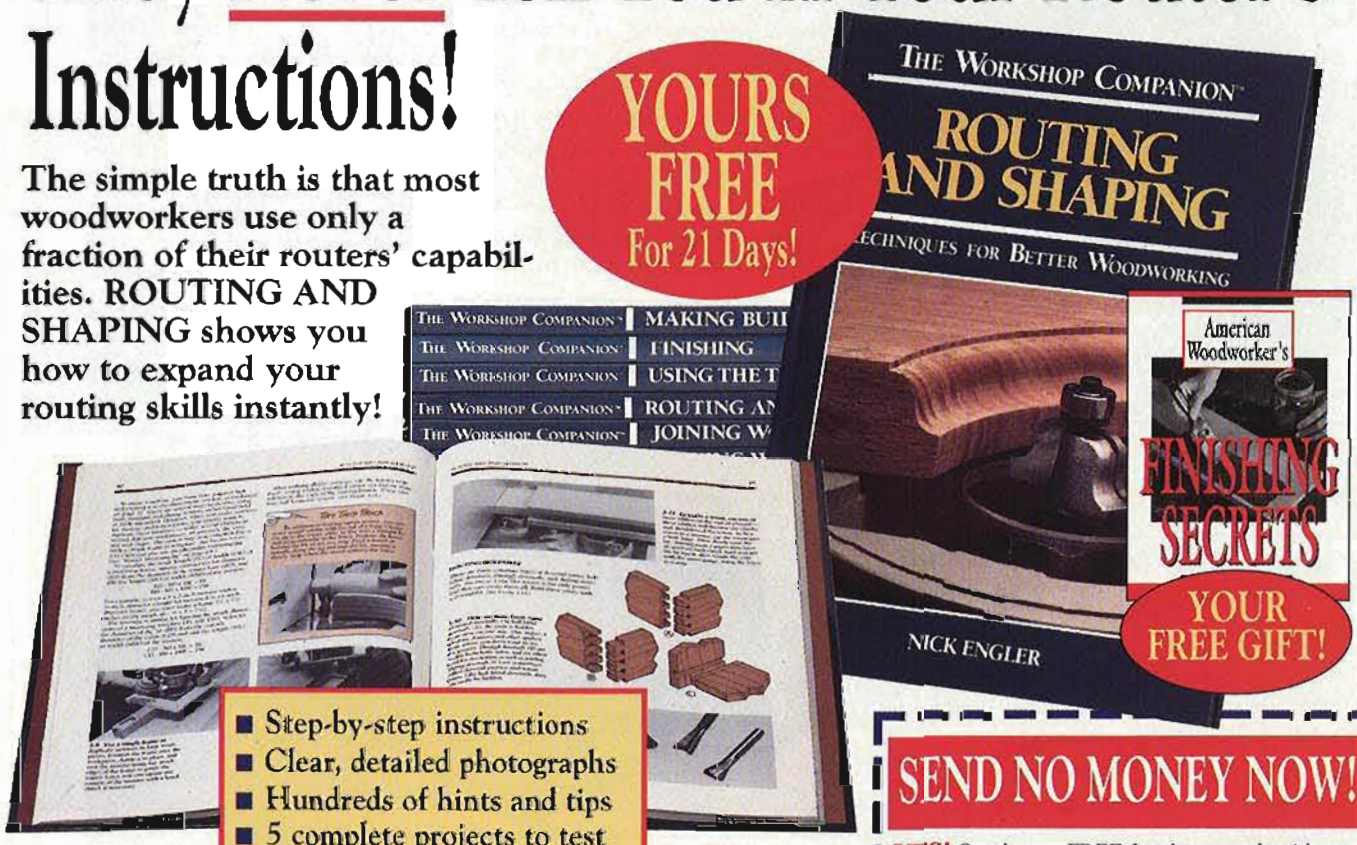
An apology to Jet

In our Ask WOOD of the January 1993 issue, page 78, we ran a photo of a Jet drill press alongside an answer to a reader's question. The reader complained that his drill press (manufactured by another company) ran so hot he could not touch the motor. The Jet drill press photo was unintentionally run alongside the article. The truth is, we're pleased enough with the Jet drill press that we included one in our IDEA SHOP.

ROUTING SECRETS

They Never Tell You in Your Router's Instructions!

The simple truth is that most woodworkers use only a fraction of their routers' capabilities. ROUTING AND SHAPING shows you how to expand your routing skills instantly!



- Step-by-step instructions
- Clear, detailed photographs
- Hundreds of hints and tips
- 5 complete projects to test your new skills

TRIPLE THE VERSATILITY OF YOUR ROUTER!

Once you discover these professional secrets, you'll have the power to cut perfect dadoes, grooves and rabbets with your router! Making ornamental legs will be a cinch! You'll be routing perfect circles . . . making flawless mortise-and-tenon joints . . . routing boxes from solid wood . . . and more!

PLUS PLANS FOR 21 TIME- AND WORK-SAVING JIGS

You'll also get detailed plans for building 21 jigs including an overhead routing jig . . . a dovetail spline jig . . . a router jointing jig . . . a router mortising jig . . . and many others!

Introducing THE WORKSHOP COMPANION™ Series

ROUTING AND SHAPING is your first volume in the most complete and most comprehensive series of woodworking books Rodale Press has ever published, THE WORKSHOP COMPANION: *Techniques for Better Woodworking*.

Each Volume Is Like Having A Master Craftsman At Your Side!

Each volume in The Workshop Companion focuses on a different skill, technique or tool. Whenever you have a question, simply turn to the appropriate volume, and the answer you need is there, complete with easy-to-understand step-by-step diagrams, photos and instructions.

FREE GIFT: American Woodworker's *Finishing Secrets*

Finally—everything you wanted to know about achieving a perfect finish every time! Jam-packed with the latest information and the best techniques from finishing experts.

CN11554

SEND NO MONEY NOW!

YES! Send me a FREE finishing guide. Also send me ROUTING AND SHAPING to shop-test free for 21 days. If I choose to keep the book, I'll pay **$16.95 ($19.95 CDN funds plus GST)**, plus postage and handling. Then, every other month, I'll be entitled to preview a new volume in THE WORKSHOP COMPANION series, also for 21 days FREE. I'm never obligated to buy any book, and I may cancel at any time. If I decide not to keep ROUTING AND SHAPING, I'll return it within 21 days and no other books in the series will be sent. The finishing guide is mine to keep no matter what. 957

NAME (First) (Last)

ADDRESS APT. #

CITY STATE ZIP

SEND THE ATTACHED CARD OR CLIP AND MAIL THIS COUPON TO:

THE WORKSHOP COMPANION,
c/o Rodale Libraries, P.O. Box 10848
Des Moines, IA 50336-0848

Printed in USA

Print this article

EARN CASH, PRIZES FOR YOUR TOP SHOP TIP

Do you have a great shop tip (or two) you'd like to share with other *WOOD*® magazine readers? For each published submission, you will get at least $40 from *WOOD* magazine (as much as $200 if we devote a page or more of space elsewhere in the magazine to your idea). You also may earn a woodworking tool for submitting the Top Shop Tip for the issue.

We try not to use shop tips that have appeared in other magazines, so please send yours to only one. *We do not return shop tips.* Mail your tip(s), address, and daytime phone number to:

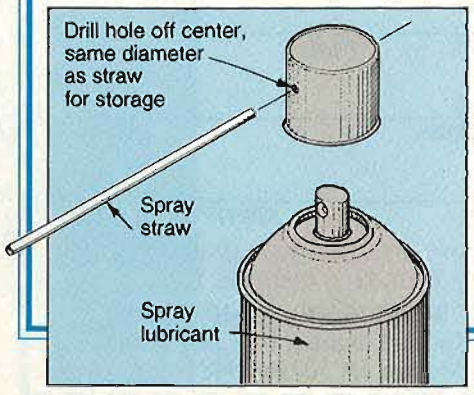
Top Shop Tip
***WOOD* Magazine**
1912 Grand Ave.
Des Moines, IA 50309-3379

Drilled can cap prevents spray straw from straying

You need to squirt some spray lubricant into a tight spot on one of your tools. Now, if you could just find that little red straw. . . .

TIP: When you do find the elusive spray tube, don't lose it again. Simply drill through the plastic can cap with a drill bit the same diameter as the straw. (A 5⁄64" hole made a tight fit for the tubes in our shop.) Then, stow the straw by sticking it through the cap; it always will be right there with the can when you need it.

-Robert N. Anderson, Fairfax, Vt.

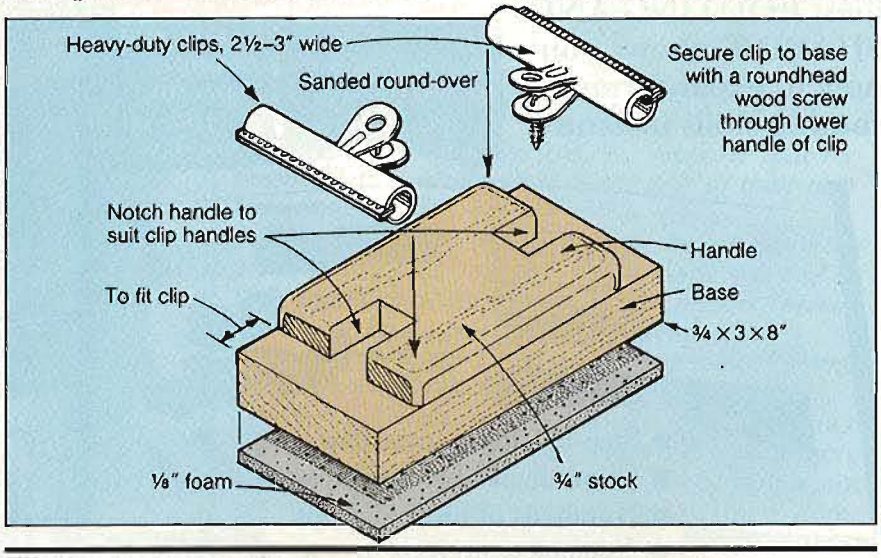


Paper clips grip sandpaper on block

A hand-sanding block still comes in handy around the workshop. It sure would be nice to have one that allows quick and easy sandpaper changes.

TIP: Incorporate spring-type paper clips into your sanding block for a sure, simple sandpaper holder. Purchase a pair of clips 2½–3" wide. Build a sanding block from two pieces of scrapwood as shown *below.* This block uses ⅓ of a standard sheet of sandpaper. Alter the dimensions to make blocks for other sizes.

-Rene Stebenne, Whitinsville, Mass.



TOP SHOP TIP

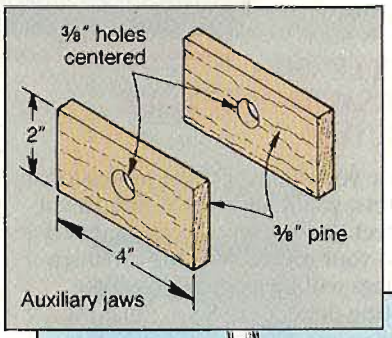
For his tip, Rene receives a Black and Decker Powerfile and model 7441 finishing sander, *right.*

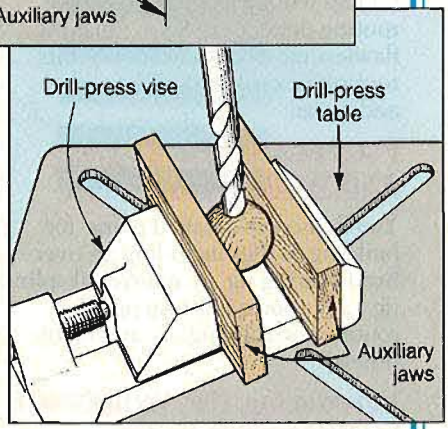
Eliminate fears when drilling spheres

It's always tricky drilling holes in wooden balls. You just can't quite get a good grip on them with a drill-press vise or clamp.

TIP: Make a simple set of auxiliary jaws that will give a vise or handscrew clamp a firm hold on wooden balls. Just cut two pieces of ⅜"-thick stock (use pine or some other soft-textured wood) to fit your clamp or vise jaws (the ones shown measure 2×4"). Then drill a ⅜" hole through the center of each. Sandwich the ball between the holes, and place the assembly in the vise or clamp for a solid grip. If you have a lot of balls to bore, affix the auxiliary jaws to the clamp or vise with double-faced tape.

-Vincent Ferello, Sarasota, Fla.





Continued on page 13

Craftsman's New Radials Industry Leaders Any Way You Cut It.

Dave,
See my notes!
Wow! I'm impressed with the stability of the carriage assembly. Like the new wide rack design and double yoke.
CRAFTSMAN
Contractor Series
10
CRAFTSMAN
Terrific! Adjustments look easy.
Great! I see you have patent pending on new internal booted motor switch.
New guard is great. Obviously best in the industry.
Great job!
Roger

Simple and accurate alignment. Fast, visible adjustments. Unparalleled safety. Craftsman's new radial arm saws offer you breakthrough technology and old-fashioned quality.

Just how good are these new radials? Well, we've released our revolutionary new blade guard design to competing manufacturers because a design this good should be shared. And that's just one of the many impressive features we designed into our new saws.

So visit your local Sears store and check out our new radial arm saws. Or, order direct from Sears catalog. There's a saw just right for you.

CRAFTSMAN®

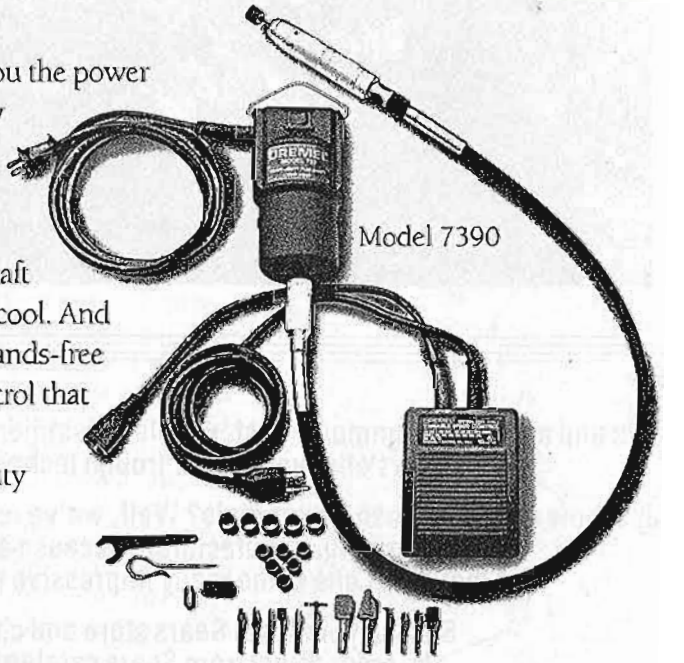
Only at Sears

Horsepower shown on tools is maximum developed.

How to keep your duck from looking like a silly goose.

The Dremel Heavy Duty Flex-Shaft tool gives you the power and control you need to create birds so lifelike they can almost fly. That's why it's the official carving tool of the Ward World Championship. The big 1/5 hp motor gives you the power you need for "hogging" out wood. The smooth running Flex-Shaft and interchangeable hand pieces run smooth and cool. And the variable speed foot peddle gives you precise, hands-free control from 0-20,000 rpm. That's the kind of control that makes all the difference in your carvings.

For more information, or to order the Heavy Duty Flex-Shaft tool, call us at 1 800 437-3635, Ext. 3.



DREMEL®

TIPS FROM YOUR SHOP (AND OURS)

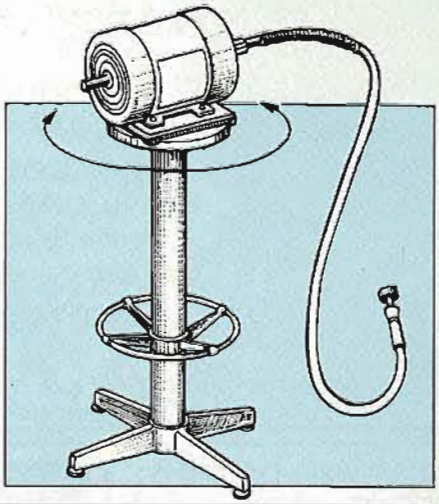
Continued from page 10

Motor for flexible shaft swivels on barstool stand

Mounting the electric motor for your flexible-shaft tool on the workbench isn't always convenient. You might want to use the tool somewhere else. And, anyway, you may need to move the motor to avoid kinking the shaft as you manipulate the handpiece.

TIP: Perch the motor on a stand made from an old swivel barstool (look for one at garage sales or secondhand stores). Replace the seat with ¾" plywood of suitable size, and then mount the motor to the plywood. Add weight to the bottom of the stool for stability, if necessary. Now, you can place the floor-standing motor wherever you need it in your shop. What's more, the motor will swivel easily to follow the shaft.

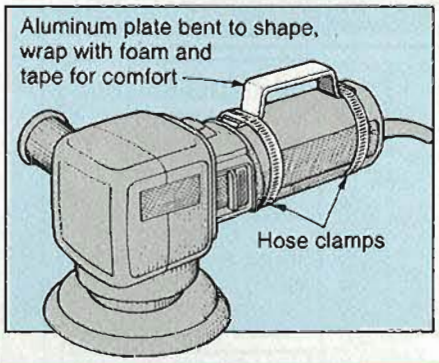
–Gene Krietemeyer, Columbus Grove, Ohio



Auxiliary handles aid arthritic woodworker

Arthritis makes it increasingly difficult for you to grip some of your power tools, but you don't even want to think about giving up the pleasure of woodworking.

TIP: An additional handle can help you hang onto many tools such as the sander shown *right*.



Form the handle from 1–1½" aluminum strap stock ⅛" thick, and attach it to the tool housing with hose clamps or other appropriate hardware. *Do not* drill holes or insert screws into tool housings without consulting a tool-service professional. Wrap the new handle with plastic foam and tape for more comfort.

–Wayne Pepper, Janesville, Wis.

Continued on page 14

Like Having A Lumberyard Right In Your Shop!

Craftsmen everywhere are using the low-cost Woodmaster to **bring in welcome extra cash** and to **save** on all their lumber needs. You can, too!

With the big 18-in. Woodmaster or the standard 12-in. model, you can quickly convert low-cost, rough lumber into valuable finished stock. You can turn out perfect frame moldings, crown, bed and base moldings, tongue & groove, door and window trim . . . all popular patterns . . . any custom design.

You can do custom work for friends, neighbors, lumberyards, picture framers, home remodelers, hobby shops and businesses.

Because it takes just seconds to convert a $2 rough board into $10 worth of finished trim, you can see why so many Woodmaster owners enjoy substantial extra incomes!

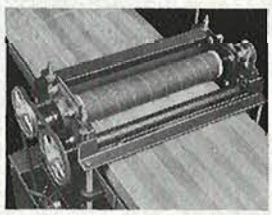
Variable Speed Makes The Difference!

Just a twist of the dial gives you perfect control for planing, sanding or sawing . . . from 0 to 1,000 cuts per inch. Creates mirror-smooth molding with no sanding required!

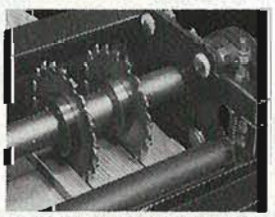
Here's what Woodmaster owner L.C. Griffin of Los Angeles writes: *"The shop test article in* ***Wood Magazine*** *that said they loved your Variable Feed Rate is what sold me. They were right."*

Call or write today for free facts on how you can try this **American-made** tool in your own shop for one full month. Easy terms.

Woodmaster's Quick-Change Molding Head lets you create custom moldings from any stock. Choose from over 250 standard trim and picture frame patterns . . . or design your own!



Power-fed sanding speeds production and improves the quality of your work. No more waves or cross-grain scratches. Separate sanding head installs in just minutes.



New ripsaw attachment lets you rip-rip with power feed in a fraction of the time it takes for multiple hand-fed passes on an ordinary table saw.

CALL TOLL-FREE
1-800-821-6651 Ext. PW62

FREE FACTS

☐ **YES!** Please rush me your **FREE** Information Kit plus details on your **30-DAY FREE TRIAL. GUARANTEE!**

WOODMASTER TOOLS, INC., DEPT. PW61
1431 N. TOPPING • KANSAS CITY, MO 64120

Name_____
Address_____
City_____ State_____ Zip_____
Telephone ( )_____

KITS
READY TO ASSEMBLE AND FINISH

FREE CATALOGUE

SOLID OAK

CHOICE OF EMPIRE OR PAW FEET

EASY ASSEMBLY WITH PLIERS

END TABLE 26" DIA.

COFFEE TABLE 24 x 48

OR BUY BASES SEPARATELY

Adams Wood Products, Inc.

TELEPHONE 615-587-2942

DEPT. M18, 974 FOREST DRIVE, MORRISTOWN, TN 37814

FAX 615-586-2188

STEVE WALL LUMBER CO.

Quality Hardwoods and Woodworking machinery For The Craftsman and Educational Institutions

STEVE H. WALL LUMBER CO.

BOX 287 • MAYODAN, N.C. 27027

919-427-0637 • 1-800-633-4062 • FAX 919-427-7588

Ash	4/4	Select	2.00		$ 64.00
Basswood	4/4	Select	1.40		$ 52.00
Birch	4/4	Select	2.00		$ 64.00
Cherry	4/4	Select	2.65		$ 78.00
Cypress	4/4	Select	1.75		$ 57.00
Hickory	4/4	Select	1.85		$ 55.00
Mahogany (Genuine)	4/4	Select	2.75		$ 78.00
Maple (Hard)	4/4	Select	2.05		$ 65.00
Maple (Soft)	4/4	Select	1.50		$ 52.00
Pecan	4/4	Select	1.85		$ 55.00
Poplar	4/4	Select	1.35		$ 50.00
White OR Red Oak	4/4	Select	2.10		$ 64.00
Walnut	4/4	Select	2.85		$ 79.00
Cedar (Aromatic Red)	4/4	1C+Bt.	1.40		$ 51.00
White Pine	4/4	F.G.	.95		$ 42.00
Yellow Pine	4/4	Clear	1.30		$ 50.00

Above prices are for 100' quantities of kilndried rough lumber sold by the Bd. Ft FOB Mayodan, NC. Call for quantity discounts. Other sizes and grades available.

UPS Specials

Above prices are 20 bd. ft.bundles of clear kilndried lumber 3"-10" wide • 3'-7' long (Random widths & lengths) Surfaced 2 sides or rough. Delivered UPS prepaid in the Continental U.S.

LUMBER SPECIALS

MAHOGANY

100 Bd. Ft. Bundle #1 Common S2S 13/16

$175*

CHERRY

100 Bd. Ft. Bundle 4/4 Log Run

$95*

(*FOB Mayodan Motor Freight Only)

Send $1.00 For Lumber Catalog

MAKE LIFESIZE WOODEN YARD SHADOWS

Lifesize Figures that are sure to catch the eye of all who pass by!

Just trace our full size patterns onto plywood, cut out with a sabre saw, paint black and you have a finished, lifesize "YARD SHADOW"!

FOOL YOUR FRIENDS & NEIGHBORS– PROP THEM UP IN YOUR YARD!

ONE PATTERN $5.00

3 or MORE ONLY $4.50 EACH

Circle your choice & mail this ad with $1.50 Postage & Handling to:

The Winfield Collection

Dept. W53, 1450 Torrey Rd.

Fenton, MI 48430

Order from this ad or send for our FREE catalog of over 1800 unique woodcraft projects!

HOME LUMBER CO.

449 WHITEWATER ST., WHITEWATER, WI 53190

FREE FREIGHT QUICK SHIP

Service, Quality, Price, TRY US!

1-800-262-5482

C.O.D.

Makita

LS1030

10" Miter Saw w/ Brake.

List $428.

Special

$189

BO5000 5" Random Orbit Sander	$67
6201DWE 9.6 hi torque Cordless Drill Kit midhandle design, FREE battery	$169
6095DWE 9.6 Cordless Drill Kit w/ Keyless, Universal Charger	$139
6011DW NEW 12V Cordless	$169
6211DW NEW 12V Kit	$179
BO4550 Palm Sander	$49
DA3910 Cordless Angle Drill	$99
6070DW 7.2V VSR Drill Kit	$69

QUALITY PNEUMATIC NAILERS

With Free Case

1 Year Unconditional Warranty

JF30 Brad Nailer Kit Shoots 5/8- 1 3/16 brads 18 ga.	119.00
JF50 Finish Nailer Kit Shoots 5/8-2" 16 ga.	179.00
JF 64 Finish Nailer Kit Shoots 3/4- 2 1/2 16 ga. nails	259.00

Japanese	Dia	Teeth	Arbor	Price
Industrial	3 3/8	20	15mm	19.95
Thin Kerf	4 3/8	40	20mm	24.95
Carbide	5 1/2	40	5/8	26.95
Blades	7 1/4	24	5/8	14.95
	7 1/4	40	5/8	18.95
	7 1/4	60	5/8	26.95
	8 1/4	60	5/8	39.95
	8 1/2	60	5/8	39.95
	10	60	5/8	49.00
	10	80	5/8	59.00
	10	100	5/8	79.00

DEWALT

DW682K

HEAVY DUTY PLATE JOINER KIT

$249

FREE CASE!

Includes $40 Worth of Biscuits

DW945K2 12V Cds Drill Kit free batt.	$169
DW944K2 9.6V Same	$149
DW318K Heavy Duty Jig Saw Kit	$149
DW412 ¼ sheet HD Palm Sander	$54
DW610 1½HP HD Router	$159
DW705 12" Comp Miter Saw	$349
DW364 7¼ Circ Saw w/brake	$149
DW308K HD Recipro Saw 6A	$158
DW106 3/8 Drill w/Keyless Chuck	$69

TIPS FROM YOUR SHOP (AND OURS)

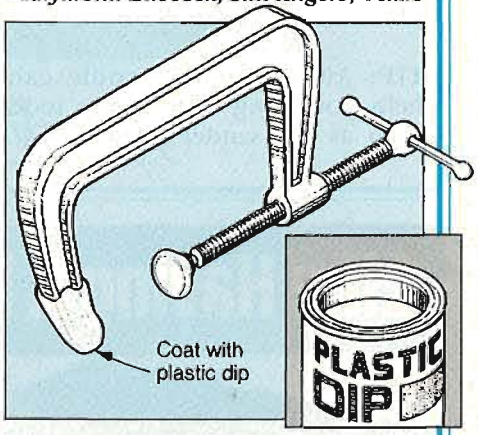
Continued from page 13

Plastic dip works great on other end of tools, too

There are all sorts of ways to protect wood from clamps. Unfortunately, most would be easier to do if you had three hands.

TIP: Coat the business end of your clamps with the plastic-dip material marketed to coat tool handles. It dries to a soft, flexible coating that will protect even finished wood. Apply it by dipping or brushing, taking care to keep it out of movable joints or threads. Coat the grip end of a pair of pliers or locking pliers, too, to make a handy tool for pulling out wooden axle pegs and the like.

–Raymond Babcock, San Angelo, Texas



MORE TIPS FROM OUR WOODWORKING PROS

- To rout a lengthwise groove in a dowel, see the simple scrapwood jig on *page 65*.
- Mount heavy objects to the wall with our clever hanger block, shown on *page 42*.
- Looking for an alternative to time-consuming hinge mounting? Then give no-mortise hinges a try. See how we used them for our clock on *page 40*.
- Check out our tried-and-true painting process for wood projects on *page 61*.
- Refer to our step-by-step drawing on *page 50* for a look at a way to form mortises for your next project.

ALL THE POWER YOU CAN HOLD.

Three totally new drills — perfectly balanced, packed with performance. These drills have won European awards for their ergonomic design. And they are as rugged as comfortable to use. The handle will not twist and distort once the battery is removed, common with most drills. See for yourself that these tools will withstand the punishment that job sites are known for.

The high torque DC motors are equipped with "Neodyne" Magnets. Neodyne is one of the strongest rare earth magnets available, yielding a higher output than traditional ferrite magnet motors. To transfer this power, we equip our drills with a special heavy duty 2-speed transmission. Using precision planetary gears sealed in a custom gear housing, this transmission will withstand years of use under the most grueling environments. Freud's 5 level torque system gives 30% more torque in reverse rotation for enhanced screw removal.

Freud's extended life high Amp-hour batteries outlast competitors by 25 to 100 percent. The computer-controlled charger helps prolong the battery life by impulse charging batteries after fully charged to maintain charge level.

3 powerful voltages: 9.6v, 12v, 13.2v
Cordless Drill/Driver and 60 minute charger

Look at these features:

- Rohm keyless chuck with lock function.
- Unique rubber grip pad for better handling.
- Quick stop on switch release for complete control.
- High performance NiCad batteries.
- All 3 drills use the same battery charger.
- Quick-change hex bit adaptor.

Get a FREE Freud 30-piece Drill Bit Set from your dealer when you buy one of these drills between April 1 and August 31, 1993. Call 800-472-7307 for names of participating dealers.

FREE!

freud®

Precisely what you need.

218 Feld Avenue • High Point, NC 27264
919-434-3171 • 800-472-7307

Do-It-Yourself Kits

Factory Direct Clocks and Furniture

Also Assembled and Finished

- Grandfather Clocks, Mantel and Wall Clocks
- Curios, Tables, Chairs, Desks, Cradle...and more!
- Solid 3/4" Black Walnut, Cherry, or Oak
- Heirloom Quality
- Solid Brass West German Movements and Dials
- Money Back Guarantee

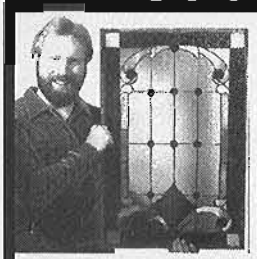
I am interested in
☐ Do-It-Yourself Kits
☐ Finished Clocks
☐ Finished Furniture

SEND $1 FOR COLOR CATALOG

Name _____
Street _____
City _____
State _____ Zip _____
(Please Print)

EMPEROR CLOCK COMPANY
World's Largest Manufacturer of Grandfather Clock Kits
Dept. 4708 Emperor Industrial Park
Fairhope, Alabama 36532 • Phone 1-205-928-2316

STAINED GLASS VIDEO & CATALOG



Improve the Looks and value of your home with:

- Entry doors & sidelights
- Kitchen cabinet inserts
- Tiffany lampshades

Save money and make it yourself - Delphi shows you how!

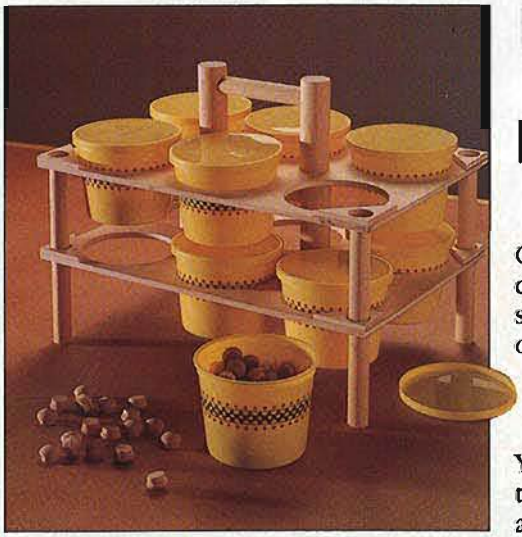
Make Your Own Custom Stained Glass...
The perfect way to get started in stained glass. Our 25-minute video covers all the basics: Scoring, breaking, foiling, and soldering. Filled with clear and simple instructions, hints, close-ups, and examples to help you craft your own stained glass windows, lamps, and more. VHS only.
#6149VW...$10.95 + $3.00 shipping/hand.

A $10.95 rebate is applied to your next order. If you don't wish to purchase, just return the video for a prompt refund, but keep the 80-page color catalog.

To Order - Call Toll Free: 1-800-248-2048

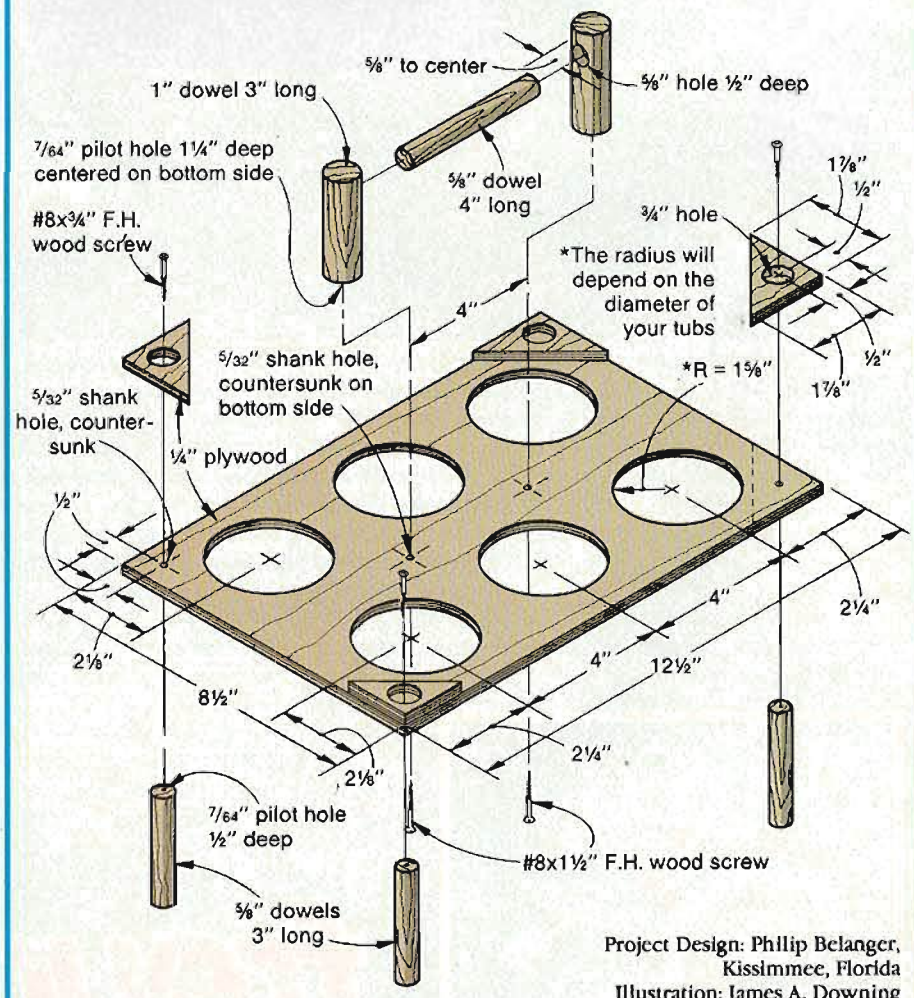
DELPHI STAINED GLASS
2116 E. Michigan Ave.
Lansing, MI 48912

HANDY HARDWARE HAULER



ISN'T IT TIME YOU GOT YOUR NUTS AND BOLTS TOGETHER

Organize your hardware and do a bit of recycling at the same time by building a few of these handy carriers. Perfect for wood buttons, dowel pins, and other small parts, they're stackable too. You'll need several margarine tubs, ¼" plywood, dowels, and wood screws.



Project Design: Philip Belanger, Kissimmee, Florida
Illustration: James A. Downing
Photograph: Wm. Hopkins

A NEW WAY TO CARRY ON A FINISHING TRADITION.

The Wagner FineCoat is unlike any finishing method you've ever seen before. But it can put a classic, professional finish on the woodworking projects you're doing now, right in your own workshop.

FineCoat's secret is Wagner's High-Volume, Low-Pressure (HVLP) technology. It allows you to spray, with

very little bounceback or over-spray. You don't need a spray booth, just an open mind and a few minutes to read about FineCoat's advantages.

Spray any finish on the shelf.

The FineCoat can give you the type of finish you had in mind, from the start of the project. It handles urethanes, oils, varnishes, shellacs, lacquers, stains, even enamel paints. Every FineCoat unit also comes with helpful hints for thinning and spraying different materials.

FineCoat gives you a professional spray finish. Coverage is smooth and even over the most intricate pieces.

Your hand has never had this much control.

With FineCoat you can get close, without dripping, or cover large areas. The spray width adjusts from ¼", to a foot wide. You can also adjust to a vertical, horizontal, or circular pattern, without changing nozzles.

The FineCoat unit is portable, storable, and plugs into any 120V outlet.

While your coats are drying, the spray gun stands

¼" To 12" Wide

securely in its own unit. And when the last coat is on, check your watch. You'll most likely be done finishing and cleaning-up, in less time than you used to spend on the finishing process alone.

To find out more about FineCoat, call 1-800-328-8251. We'll send you more information or refer you to a FineCoat dealer.

Send for free literature or a helpful demonstration video.

Check the first box below and we'll send you more literature on HVLP spraying and the FineCoat sprayer. Or, check the second box and send $3 to cover postage and handling. We'll send you the literature along with a videotape demonstrating the usage and applications of FineCoat.

- ❑ Send me more information, free.
- ❑ Send me information and the FineCoat video for $3. (Enclose a check payable to Wagner Spray Tech, or we'll charge it to your MasterCard #_____, or your Visa #_____.)

NAME_____

ADDRESS_____

CITY_____

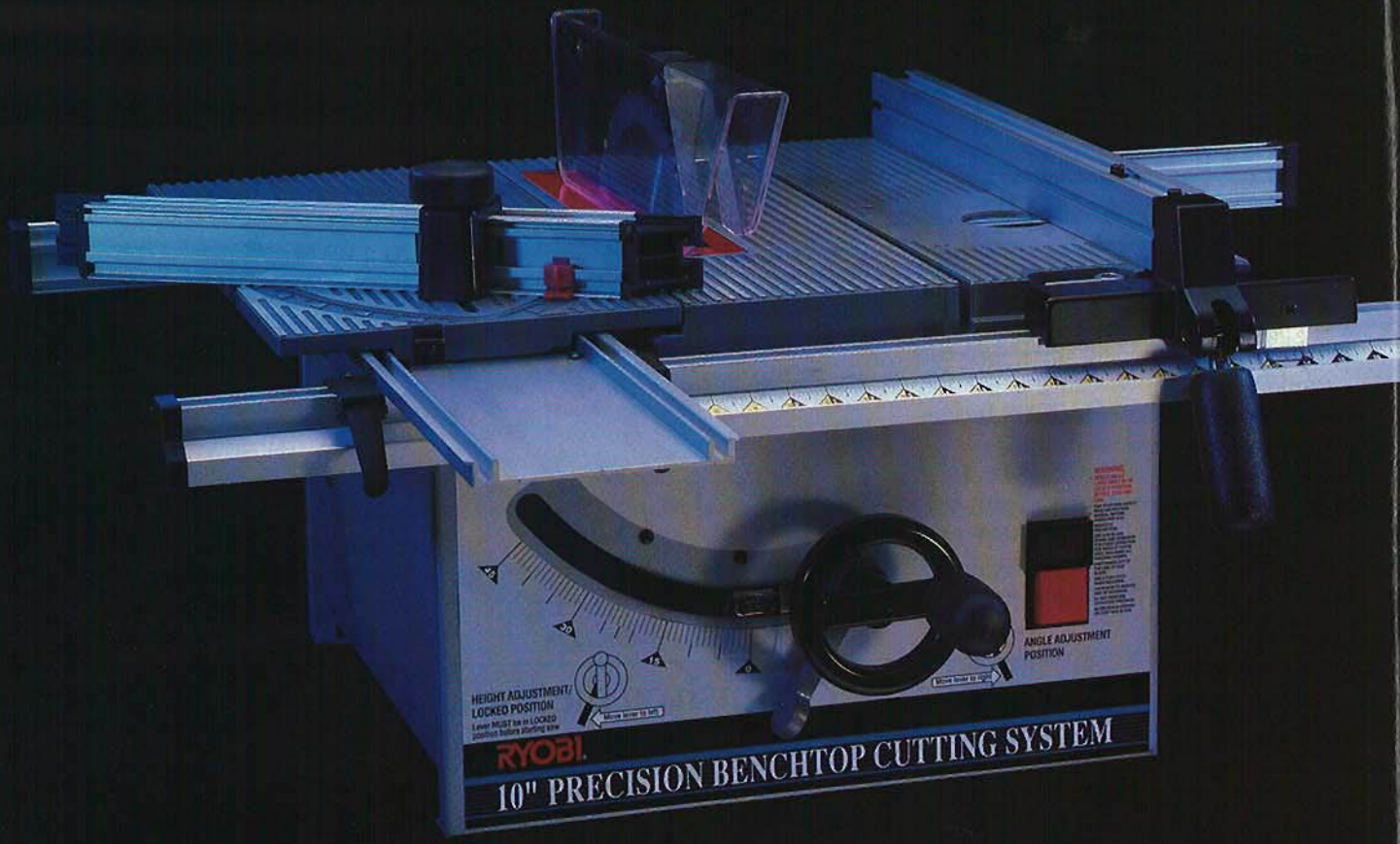
STATE_____ ZIP_____

Mail to: Wagner FineCoat, 1770 Fernbrook Ln., Plymouth, MN 55447

WAGNER
FineCoat
Low Overspray Finishing System

© 1993 Wagner Spray Tech Corp. FineCoat is a trademark of Wagner Spray Tech Corp.

NO MATTER HOW YOU CUT IT...YOU JUST CAN'T BEAT THE SYSTEM.



THE BT3000 IS MORE THAN JUST A TABLE SAW — IT'S A PRECISION CUTTING SYSTEM. IT COMBINES THE PERFORMANCE OF A STATIONARY TOOL WITH THE CONVENIENCE OF A PORTABLE TABLE SAW. USING SOPHISTICATED ENGINEERING AND DESIGN, THE BT3000 OFFERS MORE FEATURES, GREATER PRECISION AND MORE VERSATILITY THAN ANY OTHER TOOL IN ITS PRICE RANGE. SEE THE BT3000 AT A QUALITY TOOL SUPPLIER NEAR YOU. THERE'S NOTHING LIKE IT ON THE MARKET. NOTHING.

RYOBI®

WORKAHOLICS™

RYOBI AMERICA CORPORATION, 5201 PEARMAN DAIRY RD., SUITE 1, ANDERSON, SC 29625-8950

© RYOBI AMERICA CORP. 1992

ASK WOOD

Whether your woodworker's license reads "Beginner," "Intermediate," or "Advanced," you're bound to have a few questions about your favorite hobby. We can help by consulting our staff and outside experts. Send questions to:

Ask WOOD
Better Homes and Gardens®
WOOD® Magazine
1912 Grand Ave.
Des Moines, IA 50309-3379

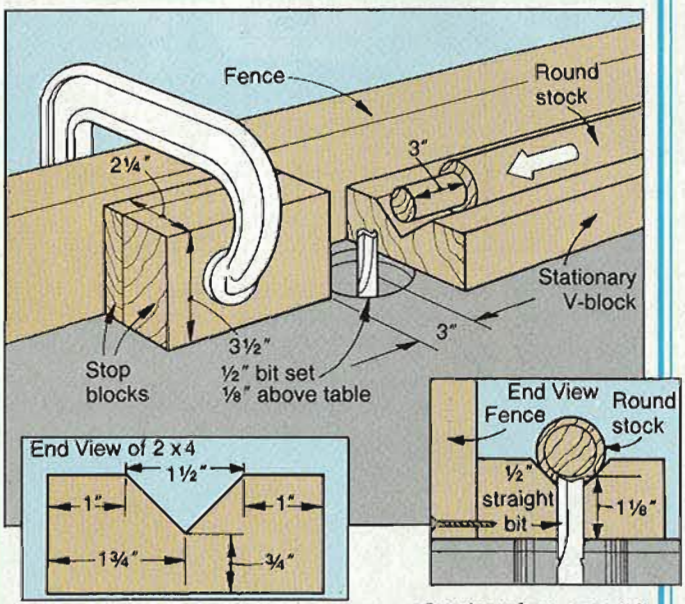
Making tenons on round stock

I'm building a quilting frame for a ladies sewing group. I need to make a ⅞" tenon, 3" long, on each end of an 8' long dowel that's 1¼" in diameter. How can this be done with such a long piece?

—Fred Drewette, Lake Elsinore, Calif.

Here's how, Fred. Mount a ½" straight bit in your table-mounted router. Then construct a V-block according to the dimensions shown below. Attach the V-block to an auxiliary wood fence with wood screws. (An ordinary straight 2x4" will work for this.) Clamp the fence and V-block to the table securely. The groove in the V-block should align with the center of the router bit. Set the bit 1 ⅛" above the table. Next place a stop block against the fence and 3" to the left of the far edge of the bit. (See below.) Now lay your 8' dowel in the V-block and place a support under the part of the dowel that extends beyond the table. Begin routing.

Note: When using this set-up, make multiple passes by sliding the dowel into the bit, making each succeeding cut by rotating the dowel counter clockwise. After the desired material is removed, clean off the tenon lip by rotating the dowel in a clockwise motion.



Continued on page 20

EAGLE AMERICA
NEW!
3-Piece Value Pak
#600-1000
Three of our best selling carbide tipped saw blades at a very special price. Every wood shop needs these blades. A great Fathers Day gift too!

10" x 50T Combination Blade
The Eagle Combination blade is just right for the woodworker who wants a blade to cut both with and across the grain without stopping to change blades. Great for plywood, hardwood, softwood, waferboard and even plastics. #610-5001...$49.99

10" x 60T Trim Blade
This high quality production blade is designed for extra smooth crosscut and trimming applications. Great for mitre-cutting. #610-6003...$54.99

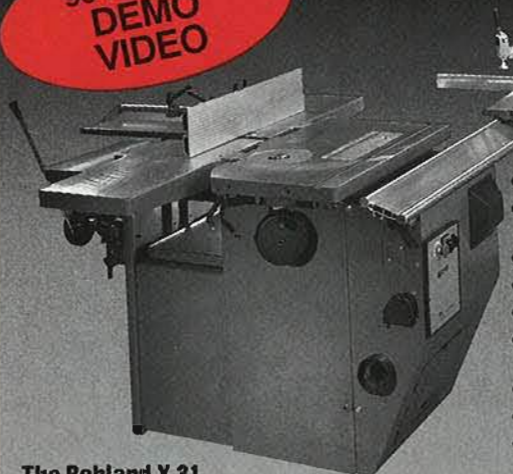
10" x 24T Rip Blade
This rugged heavy duty blade is designed for high production ripping on all types of solid hard and soft woods. #610-2401...$49.99
(All blades 5/8" bore)

Complete 3 -Piece Value Pak #600-1000
BEST VALUE
Sale Price $145.99

Call for brochure on complete line of saw blades.
Made in U.S.A.
1-800-872-2511 Ext.1206
or write:
Eagle America Box 1099
Chardon, Ohio 44024

Ask for our free catalog!

ROBLAND X 31
THE INTELLIGENT ONE MAN SHOP
90-MINUTE DEMO VIDEO



- 1100 lbs.
- 3 separate 3HP motors
- 12" jointer
- 12" planer
- 10" table saw
- 50" sliding table
- 3HP shaper
- mortiser
- cast iron

The Robland X 31 is designed to make maximum use of minimum space ideal for the small professional shop and the demanding hobbyist. Change from one tool to another in 20 seconds or less! Solid, sturdy, reliable.

CALL OR WRITE FOR MORE INFORMATION NOW!
2081 LAGUNA CANYON RD., LAGUNA BEACH, CA 92651
LAGUNA TOOLS
1-800-234-1976 or 714-494-7006

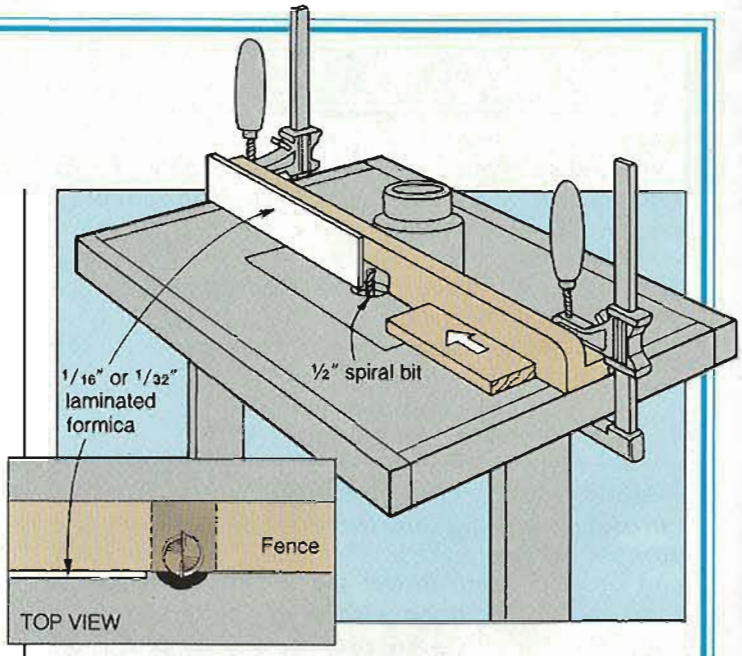
ASK WOOD

Continued from page 19

Turn your router table into a handy jointer

From necessity, virtually everything I have built I've made from edge-glued scrap. I joint every piece on a router table without using a split fence. I simply clamp a straightedge to the table and run the workpiece between it and a straight bit, adjusting the straightedge to take off whatever amount I want. Since I have never seen this technique suggested in any literature, I assume there must be something dangerous or unsuitable about it. Could you please enlighten me?

—Bert Mason, Jr., Milwaukee, Ore.



Your premise is good, Bert, but we'd suggest changing your technique. Running a router bit in the open as you describe can be dangerous. Plus, binding and even kickback could occur at any time. However, using your router table as a jointer works well on stock up to 1½6" thick.

We asked router expert Brad Witt, owner of Woodhaven, Davenport, Iowa (800/344-6657), to tell us how you can safely and easily joint stock on a router table. According to Brad, "You need to build an offset fence to make it work effectively and safely. Instead of spending money on a commercial split fence, here's what I advise: construct a fence extension like the one shown above. *Along the edge of one half, laminate a ⅛6" piece of plastic laminate (⅛2" for finish work).*

"This extra thickness of laminate corresponds to the amount of material you are removing. So now, you have a solid surface to run your workpiece against," says Witt.

Quality Woodworking Machines at Affordable prices from

Penn State Industries

Dept. W, 2850 Comly Road • Phila, Pa. 19154 • Info: 215-676-7609
Order Toll Free 1-800-377-7297 • Visa, Master, & Discover Cards accepted
When ordering - Add UPS Shipping Charges as noted • Pa residents add 7% Sales Tax
Call or Write for our New 32 Page Color Catalog

Two Way Sanders

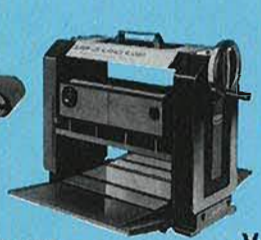
Features of both models:
- Dust collector on belt
- Tables tilt to 45°
- Sealed ball bearings
- Easy belt tracking

6x9 Sander:
- Includes stand
- 9" Disc • 6"x48" Belt
- 3/4 HP, 1720 RPM
- **Free** Belts & Discs worth **$21.00**

#S69 ... **$219.95** (UPS $30)

4x8 Sander:
- 8" Disc • 4"x36" Belt
- 1/3 HP, 1720 RPM
- **Free** Belts & Discs worth **$14.00**

#S48 ... **$109.95** (UPS $8)



Super 125 Planer
***only* $359.95**

This machine will pay for itself time and again by planing your own wood. Finishes wood like machines many times its price.
- Portable at 65 lbs
- 26.2 fpm power feed
- HSS Knives 12-1/2" wide
- Motor: 16Amp, 8000RPM 2HP, 115V
- 1/8"Max depth of cut

#PLA .... **$359.95** (UPS $15)
Extra Knives ..$22/pair
Dust Chute ... $15/ea (UPS $3)
Stand ..... $39/ea. (UPS $6)

Variable Speed Scroll Saw
***only* $169.95**

Cuts intricate patterns in many different materials. Electronically controlled motor gives full power at all speeds 400-1800cpm.

FREE ACCESSORIES:
Dust blower • 1 dz blades • EZ Set permanent top arm blade holders • EZ jig to attach standard holders • 4 blade holders • Neptune 1-1/2" lettering guides w/6 patterns

Specifications:
- Motor: 1.3 Amp, 110V
- Throat: 15" deep • Stroke-3/4"
- Tilt 0-45° left • Cut Depth: 2"
- Blades: uses pin & plain end

#SVS ..... **$169.95** (UPS $10)

Dust Collectors

750 CFM Portable Dust Collector:
This 1-1/2HP model is lightweight and portable at less than 50 lbs.
• 1-1/2HP, 110/220V • 1 outlet @ 4" • 1 Bag @ 20 gal • Wt: 46 lbs • 750CFM • **Free:** 8' of hose, 1ea 4" to 3", 1 ea 4" to 2" adaptor.. **$15Value**
#DC3 ..... **$209.95** (UPS $10)

900 CFM Dust Collector:
This 1-1/2HP model allows for use in 2 or more machines & gives improved service for long runs of hose.
• 1-1/2HP, 110/220V • 2 outlets @ 4" • 2 Bags @ 30 gal • Wt: 120lbs • 900CFM • **Free:** 50' of hose, 1ea 4" to 3", 2 ea 4" to 2" adaptors.. **$40Value**
#DC2 ..... **$299.95** (UPS $30)

←700 CFM Dust Collector:
This collector is perfect for hook-ups to almost any single machine.
• 1HP, 110/220V • 2 outlets @ 4" • 2 Bags @ 25 gal • Wt: 75 lbs • 700 CFM • **Free:** 8' of hose, 1 ea 4" to 3" & 4" to 2" adaptors .. **$15 Value**
#DC1B ..... **$209.95** (UPS $20)

DOVETAIL BITS 2 Flutes

1/4" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	ANGLE a	PRICE
C1068	3/8"	3/8"	1-3/4"	8°	$5.00
C1069	1/2"	1/2"	1-3/4"	14°	$5.00
C1071	3/4"	11/16"	2-1/8"	14°	$7.00

1/2" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	ANGLE a	PRICE
C1074	1/2"	1/2"	2-1/4"	14°	$5.00
C1076	3/4"	3/4"	2-1/2"	14°	$8.00

COVE BITS 2 Flutes with Bearing Guide

1/4" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	RADIUS r	PRICE
C1141	1"	1/2"	2"	1/4"	$12.00
C1143	1-1/4"	5/8"	2-1/8"	3/8"	$14.00

1/2" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	RADIUS r	PRICE
C1147	1"	1/2"	2-1/4"	1/4"	$12.00
C1150	1-1/8"	5/8"	2-1/2"	3/8"	$14.00

ROUNDOVER BITS with Bearing Guide

1/4" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	RADIUS r	PRICE
C1175	7/8"	3/8"	2"	1/8"	$10.00
C1177	1"	1/2"	2"	1/4"	$11.00
C1179	1-1/4"	5/8"	2-1/4"	3/8"	$14.00

1/2" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	RADIUS r	PRICE
C1184	1"	1/2"	2-1/4"	1/4"	$11.00
C1185	1-1/8"	1/2"	2-3/8"	5/16"	$12.00
C1186	1-1/4"	5/8"	2-1/2"	3/8"	$14.00

ROMAN OGEE 2 Flutes with Bearing Guide

1/4" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	RADIUS r	PRICE
C1153	1-1/8"	1/2"	2-1/16"	5/32"	$16.00
C1154	1-1/2"	3/4"	2-1/4"	1/4"	$18.00

1/2" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	RADIUS r	PRICE
C1155	1-1/8"	1/2"	2-1/4"	5/32"	$16.00
C1156	1-1/2"	3/4"	2-1/2"	1/4"	$18.00

CLASSICAL BITS with Bearing Guide

1/4" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	CUTTING WIDTH W	PRICE
C1289	1-1/4"	5/8"	2-1/8"	3/8"	$25.00
C1290	1-1/2"	3/4"	2-1/4"	1/2"	$25.00

1/2" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	CUTTING WIDTH W	PRICE
C1291	1-1/4"	5/8"	2-3/8"	3/8"	$25.00
C1292	1-1/2"	3/4"	2-1/2"	1/2"	$25.00

SOLID CARBIDE SPIRAL 2 Flutes

1/4" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	PRICE
C1441	1/8"	3/8"	2"	$15.00
C1442	3/16"	5/8"	2"	$15.00
C1454	7/32"	3/4"	2"	$19.00
C1443	1/4"	3/4"	2"	$15.00

1/2" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	PRICE
C1559	5/16"	7/8"	3"	$25.00
C1446	3/8"	1"	3"	$30.00
C1447	1/2"	1"	3"	$30.00

Due to the nature of solid carbide, these bits are not warranteed against breakage.

DOUBLE FLUTED STRAIGHT BITS

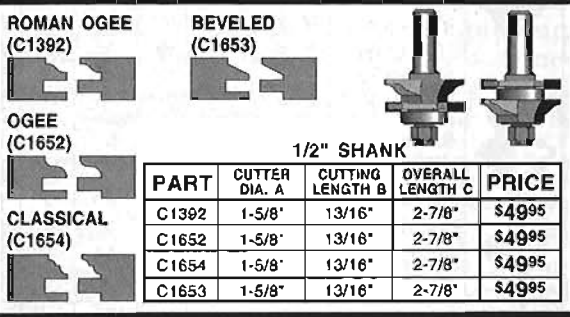
1/4" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	PRICE
C1001	1/4"	3/4"	2"	$6.00
C1002	5/16"	11/16"	2"	$6.00
C1003	3/8"	3/4"	2"	$6.00
C1004	1/2"	3/4"	2"	$8.00

1/2" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	PRICE
C1008	1/4"	3/4"	2-1/2"	$6.00
C1009	5/16"	3/4"	2-1/2"	$6.00
C1010	3/8"	3/4"	2-1/2"	$6.00
C1011	1/2"	1-3/16"	2-1/2"	$8.00

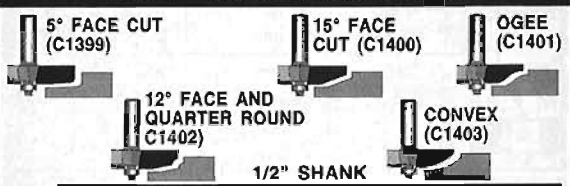
REVERSIBLE STILE & RAIL



1/2" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	PRICE
C1392	1-5/8"	13/16"	2-7/8"	$49.95
C1652	1-5/8"	13/16"	2-7/8"	$49.95
C1654	1-5/8"	13/16"	2-7/8"	$49.95
C1653	1-5/8"	13/16"	2-7/8"	$49.95

2-5/8" PANEL CUTTERS



1/2" SHANK

PART	CUTTER DIA. A	CUTTING LENGTH B	OVERALL LENGTH C	CUTTING WIDTH W	PRICE
C1399	2-5/8"	1/2"	2-1/4"	1-1/16"	$29.95
C1400	2-5/8"	7/16"	2-1/4"	1-1/16"	$29.95
C1401	2-5/8"	9/16"	2-1/4"	1-1/16"	$29.95
C1402	2-5/8"	7/16"	2-1/4"	1-1/16"	$29.95
C1403	2-5/8"	1/2"	2-1/4"	1-1/16"	$29.95

93C-107

ORDER 24 HOURS A DAY!

PHONE: 1-800-235-0272

FAX: 1-800-392-5077 NEW!

VISA MasterCard DISCOVER

$4.50 SHIPPING CHARGE ON ORDERS LESS THAN $100.00

CASCADE TOOLS, INC.

EXCLUSIVE DISTRIBUTOR OF SÖ® INDUSTRIAL CARBIDE TOOLING

MLCS LTD.

MAKE BEAUTIFUL RAISED PANEL DOORS WITH YOUR . . . 1/4" or 1/2" ROUTER . . . 1/2" or 3/4" SHAPER

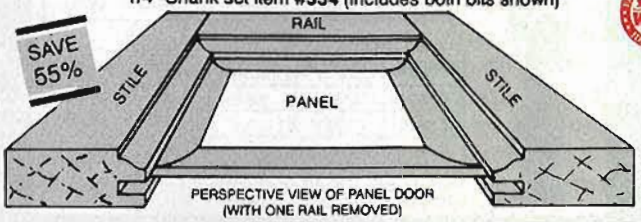
Professional production quality bit makes it quick and easy to produce matching rails and stiles — the panel raising bit with ball bearing guide makes the raised panel perfect every time.

SALE PRICE FOR COMPLETE SET $69.95 Regular value over $150.00!

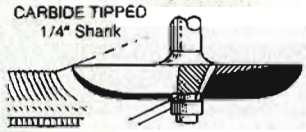
1/4" Shank set item #554 (includes both bits shown)

SET ALSO AVAILABLE IN ½" SHANK - $79.95 - Item #852

Shaper Cutters set Item #1059 SAVE! only $99.95 Set: Rail & Stile & Raised Panel Cutters

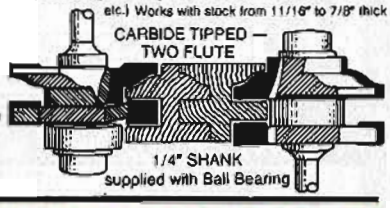


RAISED PANEL BIT SUPPLIED WITH BALL BEARING



REVERSIBLE COMBINATION RAIL and STILE BIT

(For making matching rails and stiles in raised panel doors, etc.) Works with stock from 11/16" to 7/8" thick



CARBIDE TIPPED ROUTER BITS • PROFESSIONAL PRODUCTION QUALITY *GUARANTEED*

WHEN ORDERING ANY THREE OR MORE *DEDUCT $1.00 EACH.* • FREE SHIPPING IN CONTINENTAL U.S.

ITEM NO.	BEST CUT BEST PRICE	DESCRIPTION	ANGLE/DEPTH/RADIUS CIRCLE DIAMETER	LARGE DIA.	CUTTING LENGTH	SHANK SIZE	PRICE
#601	Solid Carbide	1/8" Spiral Cutter	*Proper Adaptor Will Be Supplied	1/8"	1/2"	1/4" *	$ 9.00
#603		1/4" Spiral Cutter		1/4"	3/4"	1/4"	$12.00
#903		1/4" Spiral Cutter		1/4"	3/4"	1/2" *	$12.00
#904		3/8" Spiral Cutter		3/8"	1"	1/2" *	$24.00
#905		1/2" Spiral Cutter		1/2"	1 1/2"	1/2"	$29.00
#530		3/16" Edge Beading	3/16" Dia. of Circle		1/2"	1/4"	$15.00
#531		5/16" Edge Beading	5/16" Dia. of Circle		1/2"	1/4"	$15.50
#350		1/8" Round Over	1/8" R	3/4"	3/8"	1/4"	$11.00
#351		3/16" Round Over	3/16" R	7/8"	1/2"	1/4"	$11.00
#230		1/4" Round Over	1/4" R	1"	1/2"	1/4"	$12.00
#353		5/16" Round Over	5/16" R	1 1/8"	1/2"	1/4"	$14.00
#209		3/8" Round Over	3/8" R	1 1/4"	5/8"	1/4"	$15.00
#355		1/2" Round Over	1/2" R	1 1/2"	3/4"	1/4"	$17.00
#655		1/2" Round Over	1/2" R	1 1/2"	3/4"	1/2"	$17.00
#656		3/4" Round Over	3/4" R	2"	7/8"	1/2"	$21.00
#199		Multiform Moulding	Unlimited Patterns	2 1/4"	2"	1/2"	$40.00
#205		1/4" Cove	1/4" R	1"	1/2"	1/4"	$12.00
#206		3/8" Cove	3/8" R	1 1/4"	9/16"	1/4"	$13.00
#207		1/2" Cove	1/2" R	1 1/2"	5/8"	1/4"	$14.00
#643		1/2" Cove	1/2" R	1 1/2"	5/8"	1/2"	$15.00
#208		3/4" Cove	3/4" R	1 7/8"	3/4"	1/2"	$26.00
#231		5/32" Roman Ogee	5/32" R	1 1/4"	15/32"	1/4"	$16.00
#232		1/4" Roman Ogee	1/4" R	1 1/2"	3/4"	1/4"	$17.00
#506		1/2" Pattern	Flush Trim	1/2"	1"	1/4"	$15.00
#508		3/4" Pattern	Flush Trim	3/4"	1"	1/4"	$17.00
#366		1/8" Slot Cutter	3/8" Deep	1 1/4"	1/8"	1/4"	$14.00
#368		1/4" Slot Cutter	3/8" Deep	1 1/4"	1/4"	1/4"	$14.00
#204		3/8" Rabbeling	3/8" Deep	1 1/4"	1/2"	1/4"	$13.00
#670		3/8" Rabbeling	3/8" Deep	1 1/4"	1/2"	1/2"	$14.00

ITEM NO.	BEST CUT BEST PRICE	DESCRIPTION	ANGLE/DEPTH/RADIUS CIRCLE DIAMETER	LARGE DIA.	CUTTING LENGTH	SHANK SIZE	PRICE
#211		3/8" Core Box	round nose	3/8"	3/8"	1/4"	$10.00
#212		1/2" Core Box	round nose	1/2"	11/32"	1/4"	$13.00
#418		3/4" Core Box	round nose	3/4"	5/8"	1/4"	$15.00
#213		1" Core Box	round nose	1"	3/4"	1/2"	$17.00
#548		Lockmitre		2"	7/8"	1/4"	$32.00
#214		1/4" Straight	plunge cutting	1/4"	3/4"	1/4"	$ 6.50
#216		3/8" Straight	plunge cutting	3/8"	1"	1/4"	$ 6.50
#474		1/2" Straight	plunge cutting	1/2"	1"	1/4"	$ 7.00
#219		3/4" Straight	plunge cutting	3/4"	1"	1/4"	$ 9.50
#779		3/4" Straight	plunge cutting	3/4"	1 1/2"	1/2"	$10.00
#462		1/2" Bull Nose	1/2" Dia. of Circle		3/4"	1/4"	$16.00
#464		3/4" Bull Nose	3/4" Dia. of Circle		1"	1/4"	$21.00
#764		3/4" Bull Nose	3/4" Dia. of Circle		1"	1/2"	$21.00
#545		Tongue & Groove	Straight	1 5/8"	1"	1/4"	$29.00
#845		Tongue & Groove	Straight	1 5/8"	1"	1/2"	$29.00
#546		Tongue & Groove	Wedge	1 3/16"	1"	1/4"	$29.00
#846		Tongue & Groove	Wedge	1 5/8"	1"	1/2"	$29.00
#450		1/8" Beading	1/8" R	3/4"	3/8"	1/4"	$11.00
#233		1/4" Beading	1/4" R	1"	1/2"	1/4"	$13.00
#454		3/8" Beading	3/8" R	1 1/4"	5/8"	1/4"	$15.50
#455		1/2" Beading	1/2" R	1 1/2"	3/4"	1/4"	$17.00
#500		3/8" Flush	Trimming	3/8"	1/2"	1/4"	$ 7.00
#501		3/8" Flush	Trimming	3/8"	1"	1/4"	$ 7.50
#503		1/2" Flush	Trimming	1/2"	1"	1/4"	$ 8.50
#221		1/2" Flush	Trimming	1/2"	1 3/16"	1/2"	$ 8.00
#558		Thumbnail		1 3/16"	3/8"	1/4"	$18.50
#858		Thumbnail		2 1/2"	3/4"	1/2"	$36.00
#579		Molding Plane		1 1/8"	1 3/4"	1/4"	$31.95
#879		Molding Plane		1 1/8"	1 3/4"	1/2"	$31.95

FREE — NEW 32-PAGE CATALOGUE • **While in the Philadelphia Area Visit Our Fully Stocked Showroom** (call for easy directions)

CONTROL THE SPEED OF YOUR ROUTER

ROUT AT THE SPEED THAT GIVES THE BEST RESULTS WITH THE WOOD AND BIT YOU ARE USING!

~~$39.95~~ **SALE $29.95** Order Item #197

FEATURES:

- Works With All Routers 3¼ HP or less - 120V 15 Amp.
- Full Horsepower and Torque at All Speeds.
- Gives Your Router a Feature Only Available on Routers Costing Hundreds of Dollars!

FORSTNER BITS

For Perfect Holes

Forstner bits are designed to drill flat bottom or through holes cleanly in end grain, thin stock, veneers and regular stock. Comes with its own attractive wood box and includes the following sizes: 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1 1/8", 1 1/4", 1 3/8", 1 1/2", 1 5/8", 1 3/4", 1 7/8", 2", 2 1/8".

Regularly $99.95 ***Special Sale 16 Piece Set*** **$79.95** Order Set #314

©1993

To order by Master Charge, Visa, or Discover Call Toll Free, 7 Day - 24 Hour Order Service **1-800-533-9298** or send check to: **MLCS Ltd. P.O. Box 4053 DU, Rydal, PA 19046**

Print this article

Tehal Virk's WONDERFUL WILLOW WORKS

A mason in his homeland of India, this craftsman now turns his skilled hands to working an abundant native Wisconsin stock.

Belgium, Wisconsin, a neat-as-a-pin rural community that's little more than a stone's throw from Lake Michigan, has become culturally enriched in the past few years. And it's due to Tehal Virk, a former mason from Punjab, India.

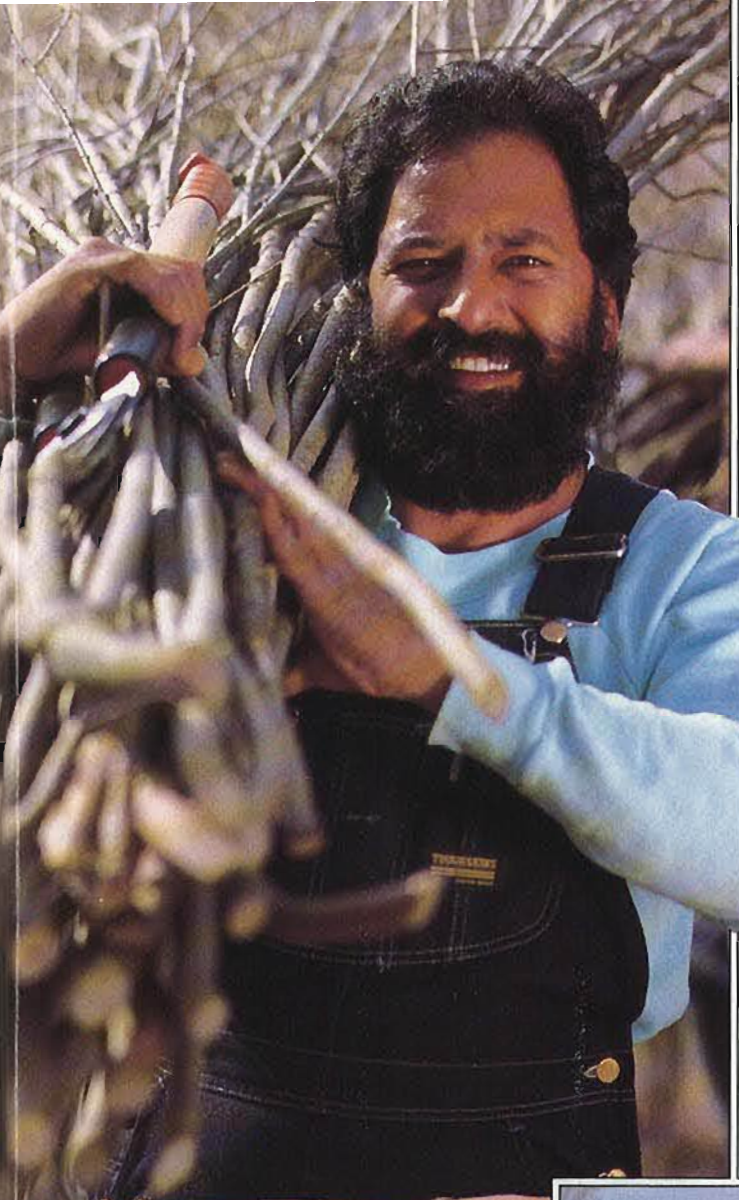
How does he do it? Some townsfolk would say through his schoolbook English. Others would point to his friendliness, sharp wit, and obvious craftsmanship. All true.

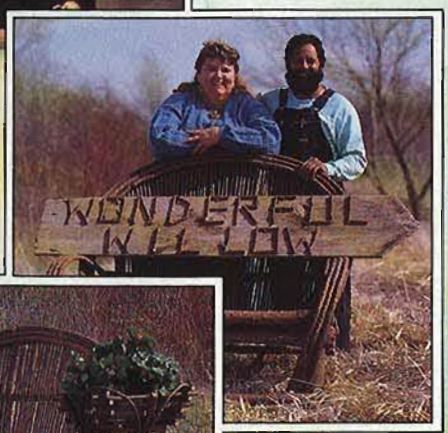
Tehal (pronounced "Tall"), an expert with brick and stone, left India in 1985 to join cousins in the U.S. At first, the American Dream evaded him as he found himself near Milwaukee pumping gas for a living. But things changed as soon as he met Zaida Thompson, an antique dealer, small-town entrepreneur, and now his wife.

Through Zaida's encouragement, Tehal tested skilled hands by creating new things. But it was when he began crafting willow furniture that he hit pay dirt. "Zaida had a photograph of some," Tehal recalls fondly. "She asked me, 'Do you think you can do this?' I said no problem at all, I'm a handy guy. But it wasn't so easy!"

That was seven years ago. Now, Tehal, 40, fills orders for his "Wonderful Willow" business from as far away as France.

Continued





▶ **Tehal Virk and his wife, Zaida Thompson, pose proudly behind Tehal's hand-hewn business sign and settee of wild willow.**

▼ **At $225 for a chair and $395 for a settee, Tehal's furniture sells as fast as he can make it.**

There's tromping in the willow thicket, but no one is visible. Then suddenly, a bundle of sticks appear, their ends poking through the near-impenetrable mass of saplings and branches. Next comes a smiling brown face framed by black hair. Attached to it, a compact body sways slightly under the load.

"I have to cut and carry like this at least twice a week nearly every week of the year to keep up with my furnituremaking," says Tehal, puffing. Bending, he tosses the bundle of furniture-to-be to the ground from his shoulder. "But for each one I cut, five come up from the stump in the spring. So, if I cut 100 sticks, I get 500 next year in their place. I guess I'll never run out."

After a half-dozen or so more excursions back into the thicket, Tehal has enough stock to haul to the shop. "We have about six acres of willow around the house here," he says, sweeping his arm before him. "And I also cut on land near the lake that belongs to a friend—he likes me to thin it out. But I may be getting too old for all this work," he laughs, hoisting a bundle into the back of his truck.

Worthy willow

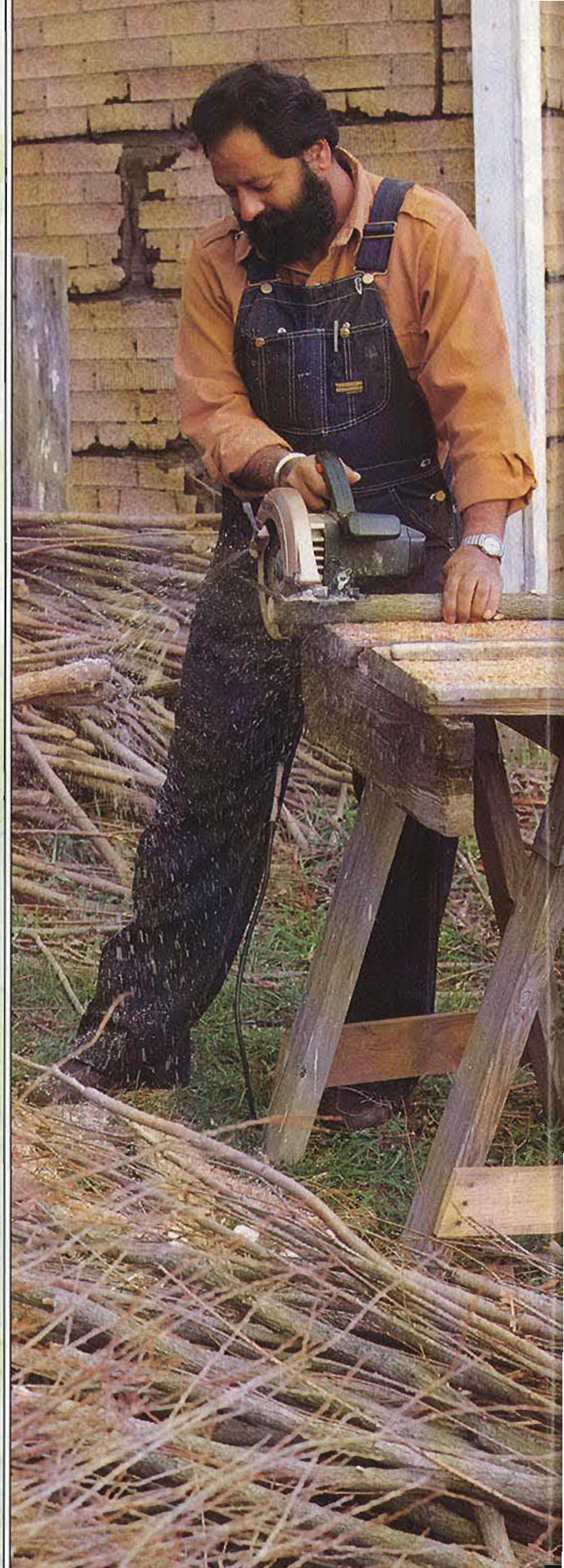
North America claims at least 100 species of willow, many growing only to shrub size. But, there are at least 40 species that attain tree status. And around eastern Wisconsin where Tehal gathers stock, he has the choice of several.

"Some people call it swamp willow, others say sandbar willow, but I like to call it diamond willow," Tehal notes. "See the little diamond marks in the bark?" He points to a diamond-like spot on the slender stalk.

Editor's note: *Actually, to be botanically correct, Tehal's "swamp" willow is peach-leaf willow. His "sandbar" willow happens to be exactly that. But his "diamond" willow we know as black willow, and it has the potential to become the largest of the three. For Tehal's use, though, all of them will work if he harvests with a selective eye, and then cares for the wood properly.*

"When I started, I didn't have anyone to teach me, and the sticks I picked up weren't nearly as good as the ones I use now," he says. "In my sticks there are no knots. Because if there are knots, the stick will crack there when you bend it."

According to Tehal, there's also a difference between fast-growing and slow-growing willow. "Willow growing in water will be lighter and softer because it grew fast, like it had fertilizer."



▶ In cool weather, freshly cut willow can remain green for several months. But Tehal prefers to process right away the sticks he hauls from the thicket to be bent. With a portable circular saw, Tehal cuts a load to length.

Although this willow worker utilizes a variety of sizes in his pieces—from pencil-thin on mirror frames to 4"-diameter for legs—he thinks not in inches, but in ages. "The sticks I put on the seats are at least two years old," he explains. "The sticks for arms are about three years old. And the sticks I put on the rounds [backs] average four to five years old. For the frame, I use pieces 10 to 15 years old." Tehal doesn't count growth rings to help with this reckoning, though. He relies on memory.

"Whenever and wherever I cut, I know the shoots will come in the spring. So after a couple of springs, I know that the shoots in one place will be good for seats, in another, arms. I know where they all are," he says as he heads his truck toward town.

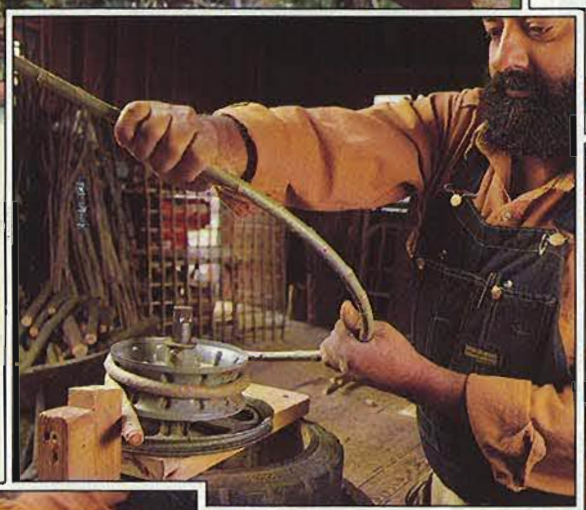
Stowing a stock of sticks

Behind Tehal's shop on Belgium's main street, stacks of willow cuttings, organized by diameter, fill the spaces between outbuildings. Walking and talking, he comments on them.

"All the willow I cut doesn't have to be worked green, but it does have to have the bark on tight. That's why I pile it in the shade or under cover—it will dry slowly then."

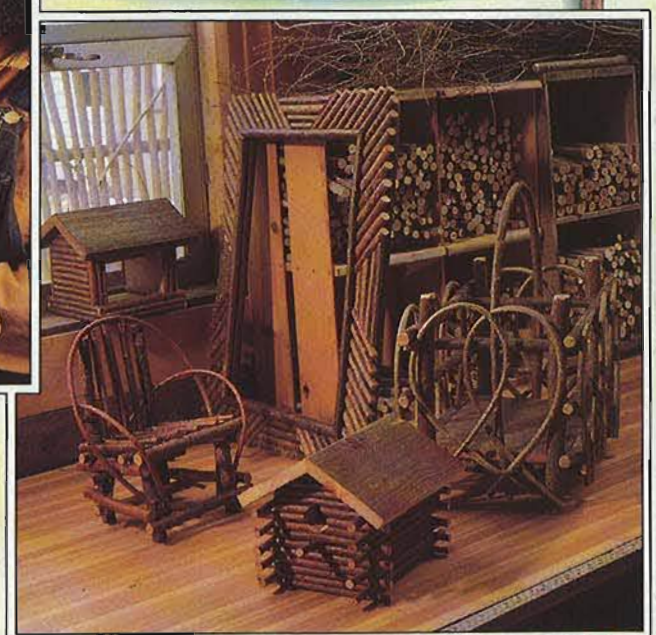
Tehal won't bend frame parts, such as legs and crosspieces, so he lets them dry out as they came from the thicket. But for willow that he must bend, the processing begins almost as soon as

Continued

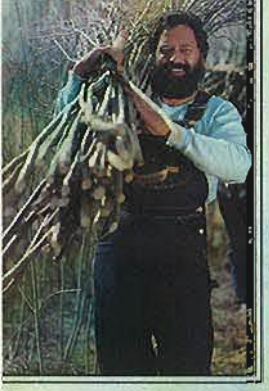


▲ An old wheel serves as a form around which Tehal bends willow to limber it up for bending.

◀ Trimming the bark on ends that will be exposed prevents peeling. Tehal's silver bracelet—that he's worn since childhood—identifies him as a Sikh, a follower of an Islamic Indian religion.



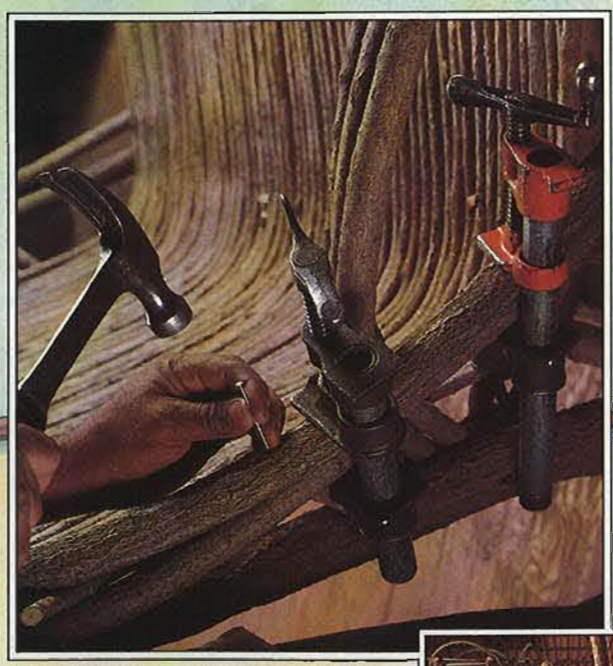
▲ Even the tiniest of willow sticks find a home as birdhouses and feeders, doll beds, mirror frames, and magazine racks. As the boxes behind indicate, Tehal sorts and stores sticks by size.



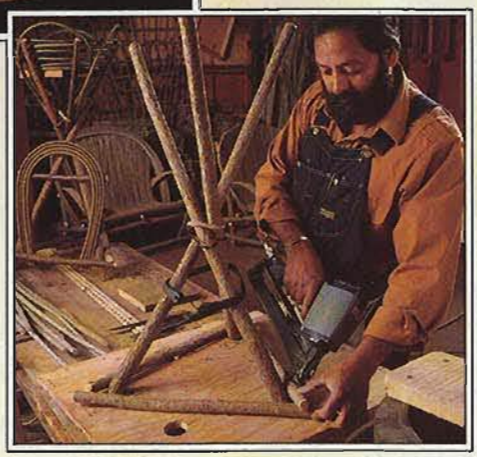
he unloads the truck. "I must have really fresh willow for seats, arms, and backs; otherwise, it is not going to bend," he comments. Then he adds, "Of course, I can rewet the wood in a bathtub, if it is skinny. And sometimes I have to do it when they dry out." Usually, Tehal won't let that happen.

At a crude worktop straddling a pair of sawhorses set up in the open, the willow worker snips off the slender top of each stick with pruning shears. Then, he crosscuts the willow to length. A yardstick nailed to the worktop and highlighting his most-used measurements shows him the length of various parts.

Tehal also does the chamfering outside. "I trim back the bark on the ends of exposed sticks with a butcher knife, so it won't catch on the floor or clothes and start the bark peeling," he explains. "It looks good, but it's really to keep the bark on that I hand-hew them."

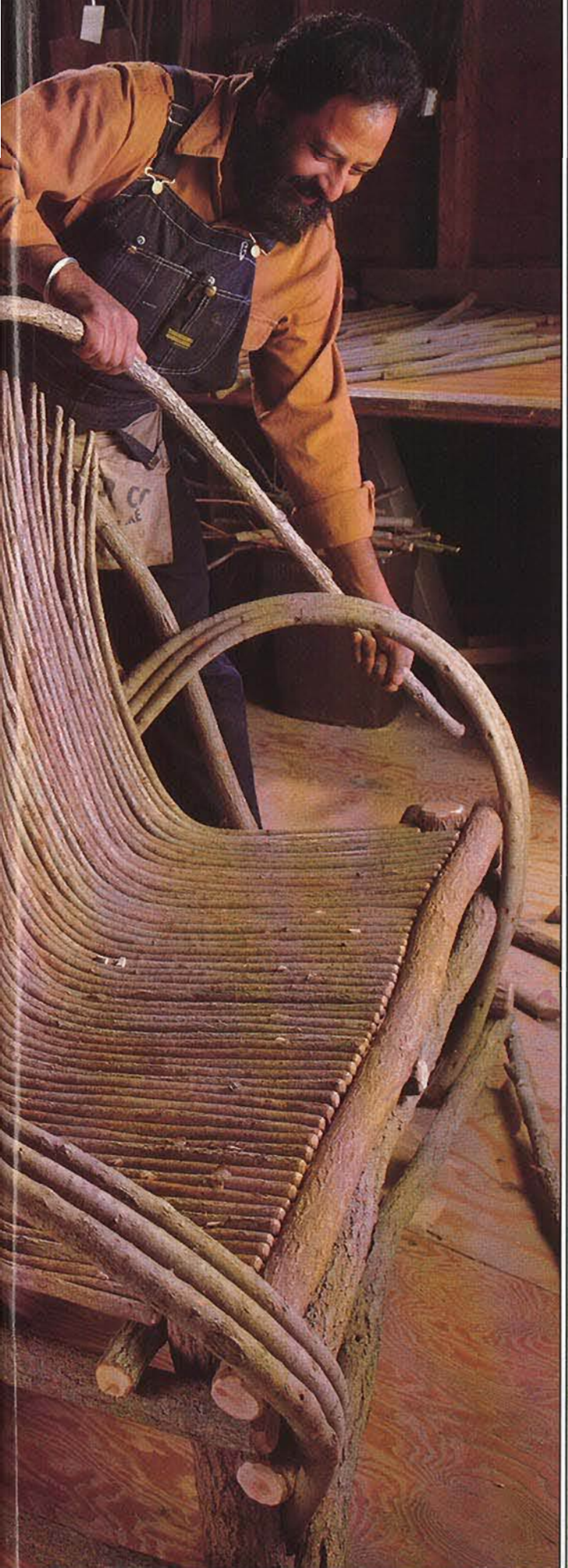


▲ Galvanized, ring-shanked nails won't rust or pull loose from the green willow. Tehal uses a pneumatic nailer to attach the multitude of sticks that make up a seat because it sinks the fasteners below the surface of the wood.



▶ Simple plywood jigs, such as this one with holes for spacing, help the willow worker hold subassemblies together while he fastens them. Here, with a nail gun, Tehal secures the top supports to the tripod of sticks that will become a planter.

▶ After one beaning by a whipping willow stick, Tehal now clamps an end before bending the length to final shape.



Bend-by-bend furniture

Tehal's line of worked willow includes chaise lounges, settees, chairs and rockers, tables, headboards, planters, magazine racks, mirror frames, birdhouses and feeders, and plant stands. In fact, if it can be made of willow, Tehal will make it. "I keep playing to see what I can come up with," he says.

Tehal likes to point out the sturdiness of his furniture. He prides himself on it. "At a show, a woman came up to me and said that she was afraid her kids would break my furniture," he says, a toothsome smile spreading across his face. "I told her, 'Ma'am, you can get up and jump on it if you want to. You can't hurt it.' "

To back up his words, Tehal bounds to the seat of a settee and, as if on a trampoline, bounces up and down. "I tell the people, 'If anybody can find better quality than this, I'll take my piece right back.' "

With care, Tehal shows why his willow furniture ranks as the best you can buy. "Some makers put the sticks on the seat 3" apart, then you need a cushion for them. These, you don't," he notes. "I also give a pitch to the seat so you don't slide off.

"And, my arms go all the way through down to the legs and behind to brace the whole piece. Others build in heart designs or other things, and I can do that, too, but I tell people that the sticks will be too far apart and make it uncomfortable and weak."

Quality construction shows up in the fastenings, too. Tehal sinks only galvanized metal into the wood. On large sticks, he prefers ring-shanked nails that won't pull loose. He attaches smaller sticks, such as those on a seat, to the frame with headless nails driven into the willow with a pneumatic nailer.

And although willow's bark has a natural tan beauty, Tehal enhances it. Two spray coats of Thompson's Three-Way Wood Protector preserves the wood as well as slows the seasoning process. Says Tehal, "Indoors, the pieces will last as long as we do. Outdoors, they should be sprayed with wood protector every season to fight mildew and bugs."

Even then, still-green willow furniture can spring a surprise on you—by sprouting! "A few years ago, I made a big willow headboard for us, but I got busy and left it out leaning against the garage." Tehal laughs remembering. "By the time I got back to it, the legs had sprouted roots right into the ground and there were little branches everywhere. It was truly living furniture!"

Wondering about willow?

For more information on Tehal's willow furniture, write him at: *The Wonderful Willow Works, 218 Main St., Belgium, WI 53013.*

Written by Peter J. Stephano Photographs: Wm. Hopkins

JEWEL OF A

With a fanciful spired stopper, this graceful perfume bottle towers above the ordinary. We think you'll find extraordinary enjoyment in turning the delicate details that give it that exotic look.

We used the following tools and supplies:

Stock

1½x1½×10" turning square. (We used cocobolo.) Select well-seasoned stock for dimensional stability. Excessive warping after turning could make the stopper or vial inside difficult, if not impossible, to remove. (A few weeks after turning our container, we reamed out the hole in the urn to restore roundness by twisting the drill bit into it by hand.)

Lathe tools

Screw center
Revolving cone tail center
Spindle gouges, ⅛", 13/64", ½"
Roughing gouge
Skew, ½"
Parting tool, 1/16"

Lathe speeds

Roughing: 500-800 rpm
Finishing and sanding: 1,200-1,500 rpm

Print this article

Start with the urn. For your stock, saw a 4½" length from a 1½×1½×10" turning square. Write *top* on the sawed end. Mark the remaining part *bottom* on the sawed end, and set it aside to use later when you turn the stopper.

Locate the center on each end of the urn stock. Bore a ⅝" hole 2½" deep into the top. Drill a pilot hole for your lathe's screw center at the other end. Use a screw that extends ¾" or less into the stock.

Attach the urn stock to the screw center, and mount on the lathe. Support the tailstock end with a revolving cone center in the ⅝" hole. A short tool rest will come in handy for this project.

With a roughing gouge or other large gouge, round down the stock to 1⅜" diameter. Mark the turning ¼" and 3¼" from the tailstock end. With a parting tool, cut in to ⅞" diameter on the waste side of each line.

Following the diameters shown on the Full-Sized Template, turn the outside profile of the urn between the marks, with the top at the tailstock end (Step 1 in the Turning the Urn drawing). Shape it with a gouge or skew, maintaining a slight curve along the side.

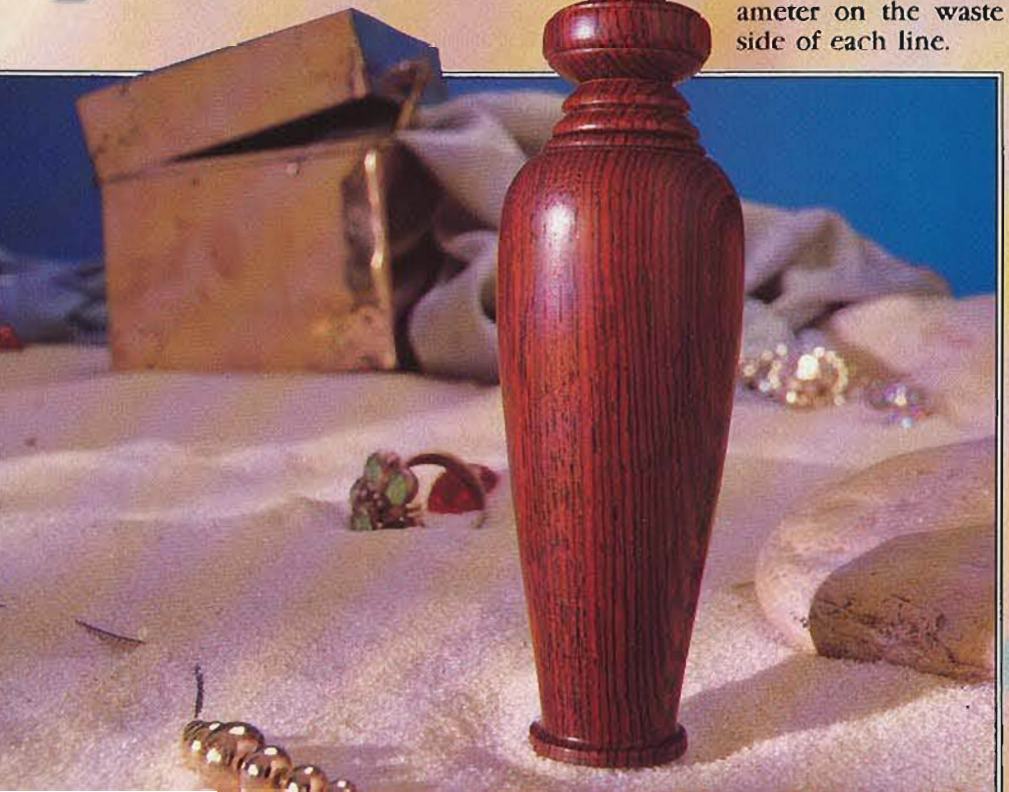
Slide the tailstock back, and then complete the bead around the opening. Sand and finish.

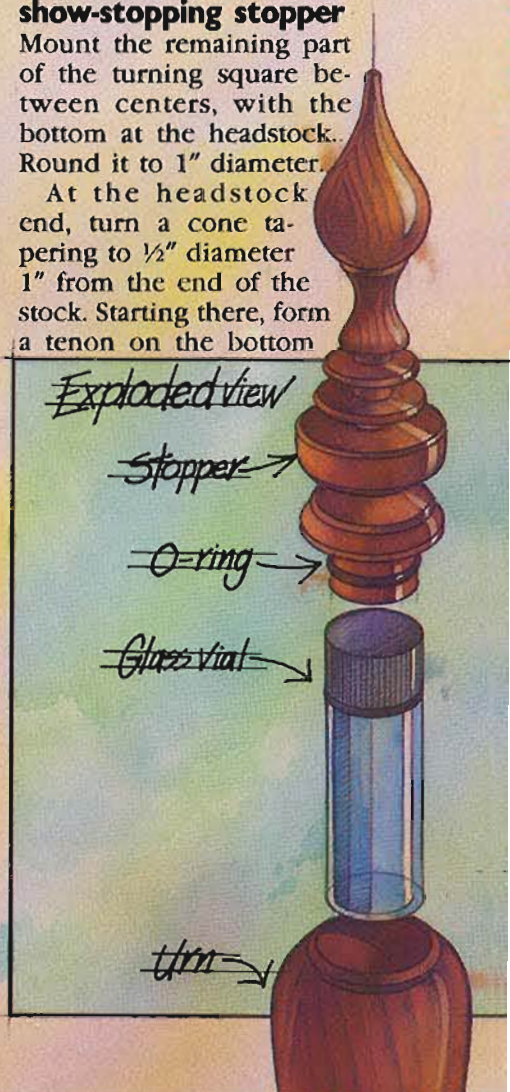
Part the urn from the lathe. Make the base slightly concave on the bottom by angling the tool tip slightly toward the top of the urn. Since the bottom will show whenever anyone tips the container to remove the vial inside, sand and finish it carefully.

Now, let's turn that show-stopping stopper

Mount the remaining part of the turning square between centers, with the bottom at the headstock. Round it to 1" diameter.

At the headstock end, turn a cone tapering to ½" diameter 1" from the end of the stock. Starting there, form a tenon on the bottom





VIAL A fanciful flask for perfume

of the stopper, shown by Step 1 of the Turning the Stopper drawing. Measure the tenon as you work to ensure that it fits into the hole in the urn. It doesn't need to be a snug fit; an O-ring holds the stopper in place. Cut the O-ring groove 3/32"-wide and 1/16" deep where shown.

Then rough the turning to approximately the shape shown by the *red* line on the drawing. Using the Full-Sized Template, draw pencil lines on the roughed-out turning to lay out the features.

Form the profile with small gouges (we used 1/8" and 13/64" miniature gouges). A good approach is to bring the finial almost to final form early. Leave it about 1/4" diameter at the tip as you turn the stopper. This helps prevent breaking the fragile turning. Further stave off problems by taking light cuts as you develop the shapes.

Note that the sharp-edged discs vary in thickness as well as diameter. Turn square-edged discs of correct diameter and thickness, and then form the curved top and bottom surfaces with your small gouge. Cut the shallow step around the top and bottom of the large bead with a 1/16" parting tool.

Then, carefully complete the finial. Don't damage the fine point on the tip as you separate the waste from the turning.

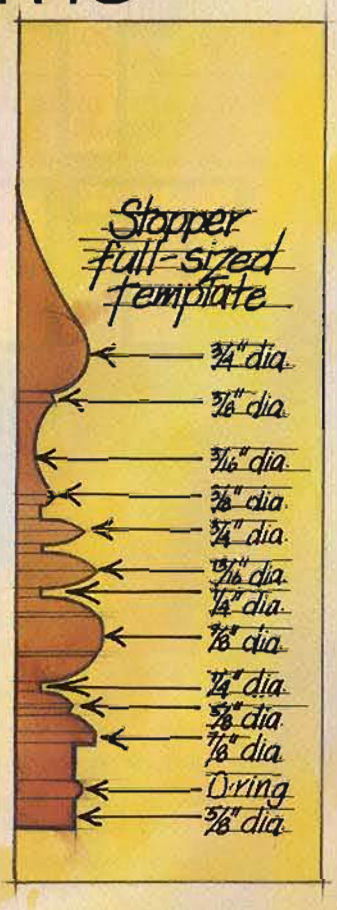
Finish the stopper to match the urn. Chamfer the bottom about 1/16", and part off the stopper.

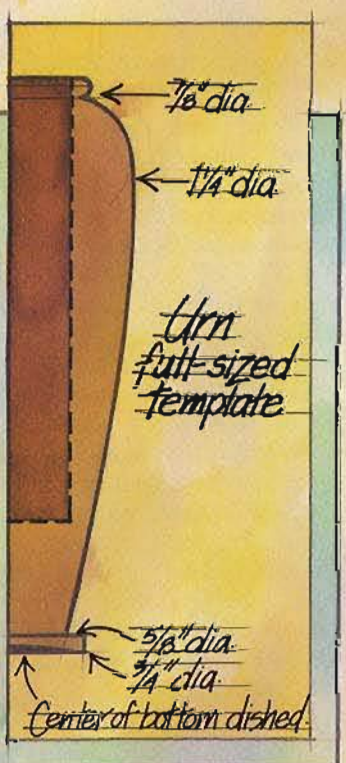
Roll a 5/8"-O.D. O-ring (available in the plumbing department at most hardware stores) into the groove around the tenon. Try the stopper's fit in the urn. If it's too loose, try an O-ring made of slightly thicker material or wrap a few strands of black sewing thread into the groove under the O-ring. Fix a lid that's too tight by sanding or filing the groove or changing to an O-ring of smaller-diameter material.

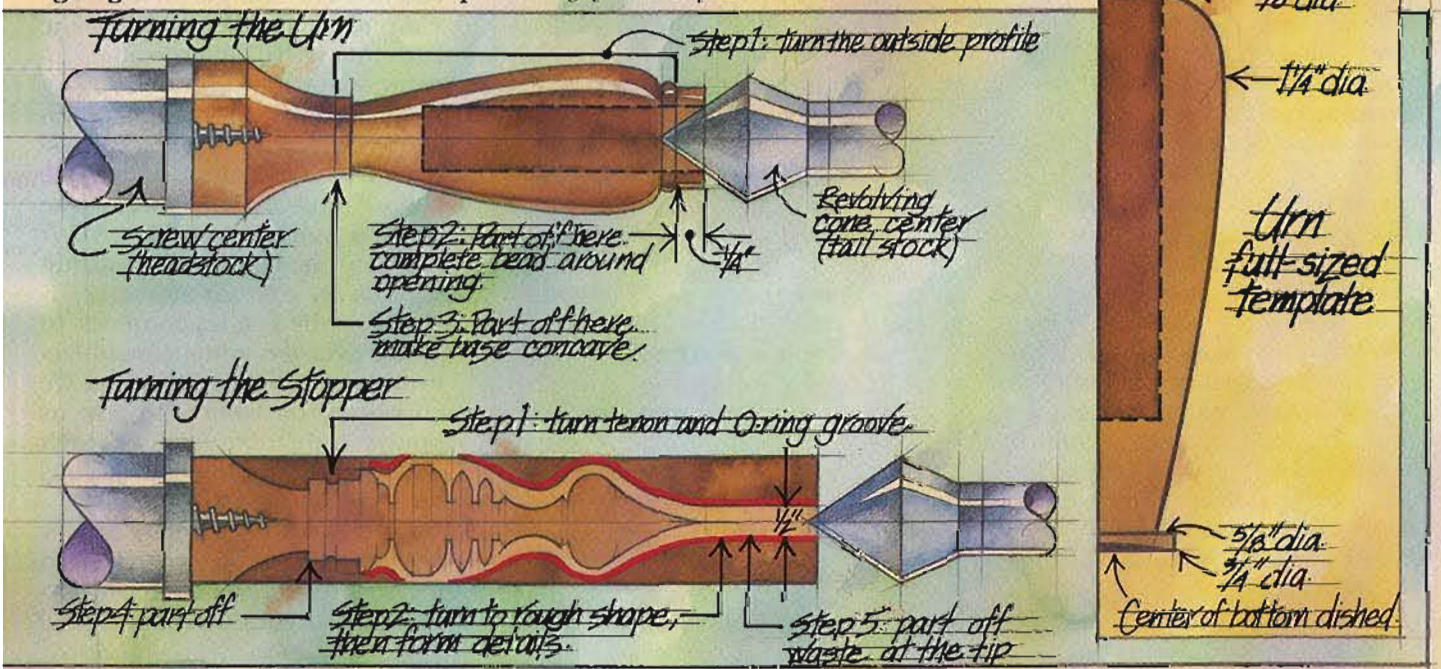
Buying Guide

Glass vial. Vial with screw-on lid, 1/8-oz. size., five for $3.50 ppd. in U.S. Add $9.95 for drill bit (fits 1/2" chuck). Craft Supplies USA, 1287 E. 1120 S., Provo, UT 84601 or call 801/373-0917

Project Design: ©Deborah Doyle
Illustrations: Mike Henry
Photograph: Wm. Hopkins






Turning the Urn
Step1: turn the outside profile
Screw center (headstock)
Step2: Part off here. Complete bead around opening.
1/4"
Revolving cone, center (tail stock)
Step3: Part off here. Make base concave.
Turning the Stopper
Step1: turn tenon and O-ring groove.
1/2"
Step4 part off
Step2: turn to rough shape, then form details.
Step5: part off waste at the tip

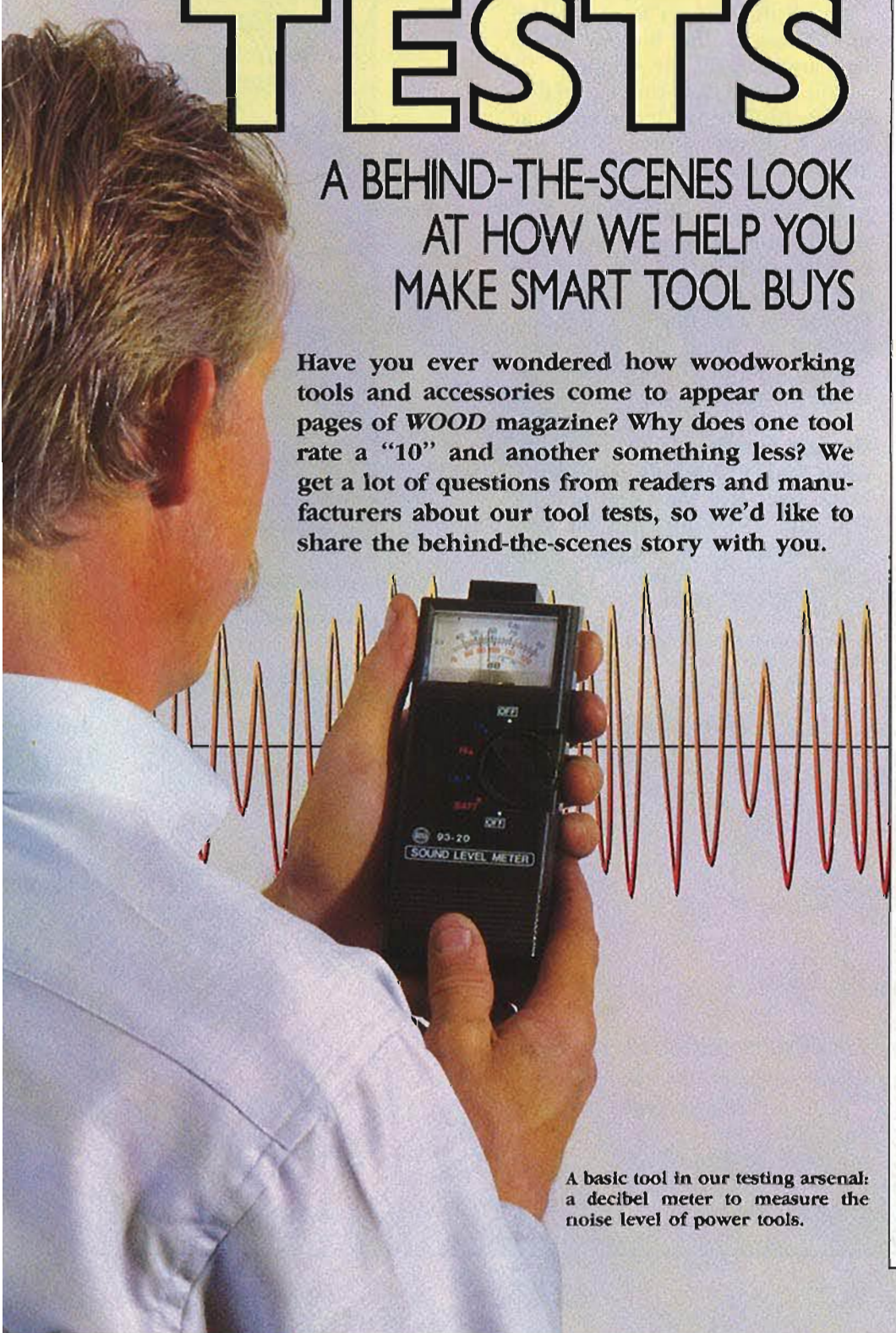
Print this article

WOOD® MAGAZINE

TOOL TESTS

A BEHIND-THE-SCENES LOOK AT HOW WE HELP YOU MAKE SMART TOOL BUYS

Have you ever wondered how woodworking tools and accessories come to appear on the pages of *WOOD* magazine? Why does one tool rate a "10" and another something less? We get a lot of questions from readers and manufacturers about our tool tests, so we'd like to share the behind-the-scenes story with you.



A basic tool in our testing arsenal: a decibel meter to measure the noise level of power tools.

Why we take our tool testing so seriously

For many woodworkers, their tool collection may be the most valuable asset after their home and autos. (Although many of us would trade in our autos before our tool collection!)

With that much investment on the line, and a bewildering number of choices in the marketplace, we think there's a clear need for help in selecting those tools that offer the best value. After all, few readers have the time, energy, or resources to personally test every tool model before making a purchase. And today, an increasing number of woodworkers purchase their tools virtually sight-unseen through the mail, making our recommendations more important than ever.

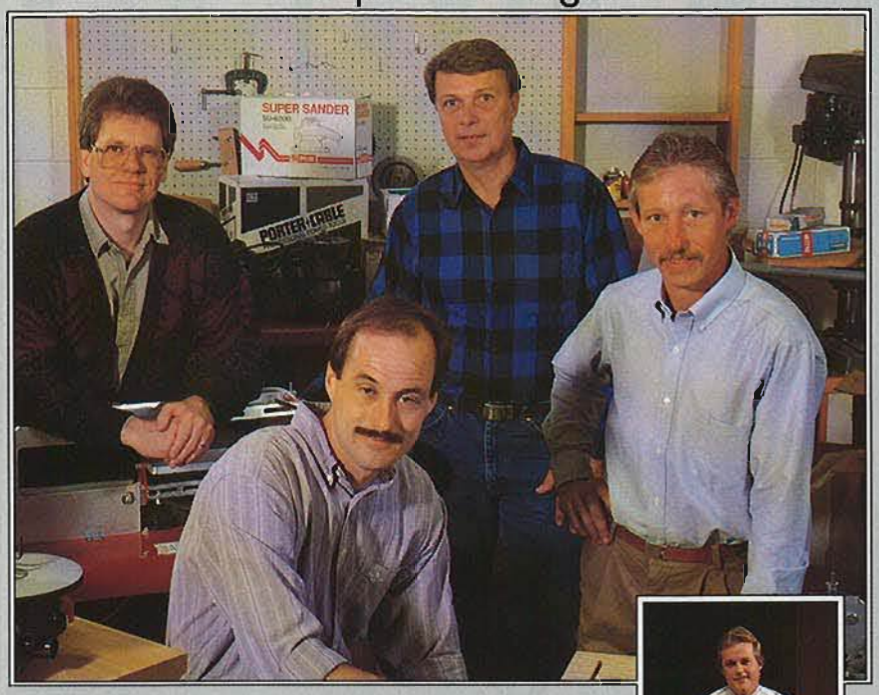
Our motto: Tell it like it is

Whenever you read a *WOOD* magazine tool review, *you can be sure that you're getting an honest evaluation not swayed by the interests of tool manufacturers.* We wouldn't have it any other way. After all, you pay a premium price for this magazine, and you deserve nothing less than a straightforward review that tells the good *and* the bad. At *WOOD*, the reader *always* comes first.

To assure you of honest evaluations, we insulate our tool testers from any pressure on the part of tool manufacturers. The products/techniques editor serves as the contact with manufacturers, except in rare instances when a tester needs to speak directly with a manufacturer to clarify a technicality. We encourage our testers to give us honest evaluations, and we don't change their recommendations for any reason.

And, we listen. Some of our best ideas come from readers, so please let us know your suggestions for articles on tool buying.

Meet the team that puts it all together



A face-to-face look at the *WOOD* magazine product-testing team *(from left)*: George Granseth, Bill Krier, Chuck Hedlund, and Bob McFarlin.

Technical illustrator Kim Downing *(right)* dismantles woodworking machines to help you understand them.

To make sure you get the best tool-buying advice, we've enlisted the help of an enthusiastic group of independent woodworking-tool experts. Their job: to thoroughly test, evaluate, and make buying recommendations for the tools that appear in *WOOD* magazine. Here's a look at each of the individuals in the photo *above*:

- ***George Granseth*** has been a technical consultant with *WOOD* magazine since the first issue in September 1984. In addition to his tool-testing responsibilities, George operates a five-man custom cabinetry shop.
- ***Bob McFarlin*** came on board in January 1991. Bob is an avid woodworker and co-owns an auto-body shop.
- ***Chuck Hedlund*** has tested tools since the August 1992 issue. He also builds some of the projects in this magazine. A former finish carpenter and production manager for a millwork shop, Chuck works as a self-employed cabinet and furniture maker.
- ***Bill Krier***—that's me. I serve as the team's quarterback in my role as products/techniques editor. For every product-buying article, I gather the latest tools and put them in the hands of our testers. After the completion of the tests, I write up the results, put together a comparison chart, and choose the necessary photos and illustrations. For an exact idea of how this system works, see the charted information *above right*.
- ***Kim Downing***, shown *above inset*, helps readers understand the complexities of power tools through his detailed technical illustrations. His work has graced the pages of this magazine since November 1984.

WOOD MAGAZINES TOOL-TESTING PROCEDURES

TESTING STRATEGIES PLANNED

- Tool-testing team meets regularly to:
  - Determine type of tools that need testing.
  - Select models to include in test.
  - Formulate testing procedures.

MANUFACTURERS SEND REQUESTED TOOLS

- Products\Techniques editor requests product samples from manufacturers.

SIDE-BY-SIDE COMPARATIVE TESTING

- Tools assembled.
- Features and components examined.
- Identical tests performed on all models.

ASSEMBLING THE DATA

- Comparison chart with ratings and specifications developed.
- Photographs and illustrations created.
- Article produced.

A few words about "Products that Perform"

From time to time, we hear from readers who think that our "Products that Perform" department consists of paid advertisements. Nothing could be further from the truth. Here's why.

To find products for this section, we scour press releases, trade shows, and catalogs. When we come across something that seems unique, of good value, and, most of all, of usefulness to our woodworking audience, we order a sample for testing. Many of these products meet our expectations, but some do not. *Only the tools or accessories that pass our tests with flying colors will see the light of day in this publication.*

Written by Bill Krier
Photographs: John Hetherington

A CLEAR WINNER!
LEADED
PROVEN TECHNIQUES FROM THE
SHOP TESTED
WOOD MAGAZINE SHOP
AmChem
WHITING
STAINED GLASS PUTTY
Color: Lead
1
2
3
4
5
6
7
8
9

Print this article

GLASS PANELS

If you've admired the striking beauty of leaded panels made of clear, stained, or beveled glass, you may be surprised at how easily you can make one. With our instructions and a modest investment in tools and supplies, you can create simple, but elegant, panels such as the one shown in the inset *left*. And, you'll find endless woodworking applications for such panels—as with the pendulum-clock project on *page 39*.

A handful of items to help you get started

For an investment of less than $150, you can buy the essential tools and supplies for making leaded-glass panels. Here's a listing and the approximate prices of the items shown *below*.

1. Whiting powder ($2 for 1 pound)
2. Glazing cement ($6 for 1 pound)
3. Round-H lead came, ¼" wide ($2.30 for a 6' length)
4. Came-stretching vise ($4)
5. Glass ($4–$10 per square foot for most types)
6. Horseshoe nails (75¢ per dozen)
7. Glass cutter ($4–$30; the least expensive models work fine, and the higher-priced versions have carbide wheels for longer life)
8. Cork-backed straightedge ($4)
9. Three-bladed pattern shears ($10)
10. Running pliers ($10)
11. Breaker/grozer pliers with ⅜"-wide jaws ($10)
12. Flush-cutting lead nippers ($7–$22)
13. Flux ($3 for 4 ounces)
14. Flux brush (35¢)
15. 80- to 100-watt soldering iron with 700° temperature control and ⅜"-wide tip ($40–$70)
16. 50/50 solder ($6 for a 1-pound spool)

If you live near a large city, you'll find these tools and supplies at a stained-glass store. Or, you can order them from the source in the Buying Guide on *page 38*.

Let's start by making our pattern

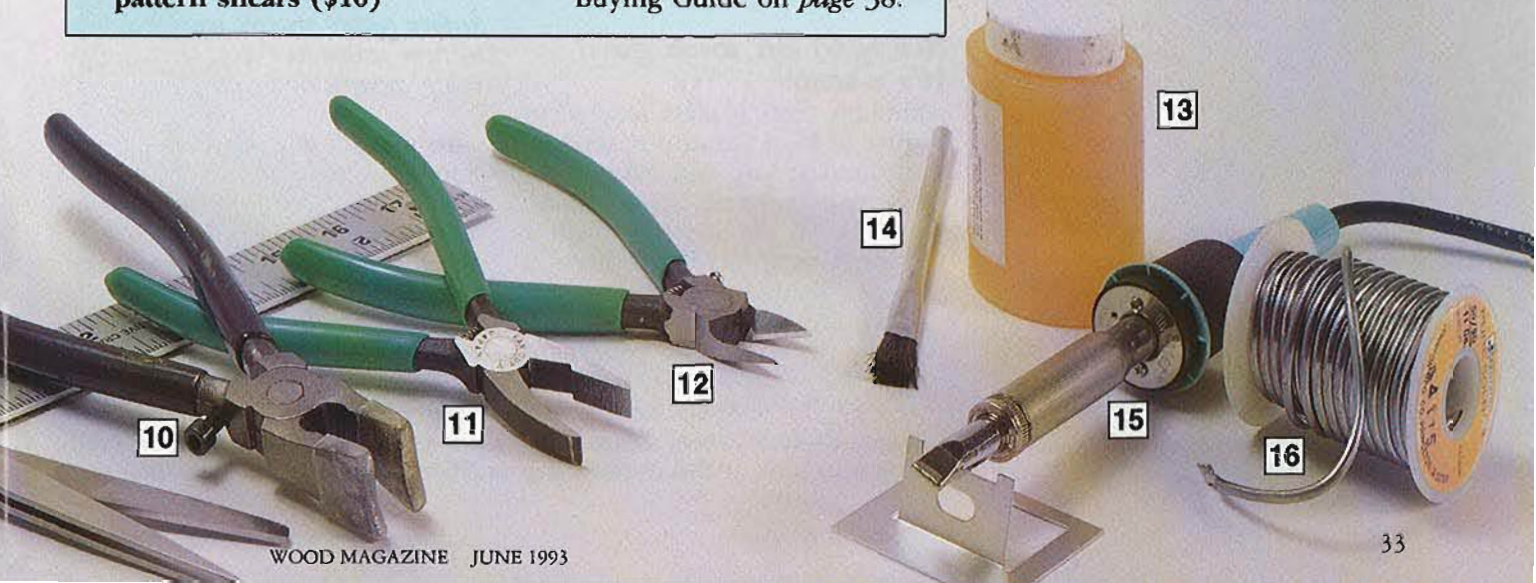
To keep things simple, we'll show you how to make a panel with glass pieces having straight edges only. As your skills improve, you may want to try free-form design using curved pieces of glass.

First, determine the exact width and height of your panel. Lay out these dimensions on a piece of paper (shown by the dashed line in the drawing on *page 34*), and mark solid lines ⅛" inside the dashed lines on all sides.

***Note:** We suggest you use H-channel lead came for the inside* and *border of your panel. This way, you can trim some of the lead from the border of the panel to help it fit into its frame. U-channel lead came does not afford you this option.*

Now, select the beveled pieces for your design. You can choose these pre-cut pieces in many sizes and shapes such as squares, rectangles, diamonds, and triangles. The catalog listed in the Buying Guide on *page 38* carries a full line of beveled glass.

Continued



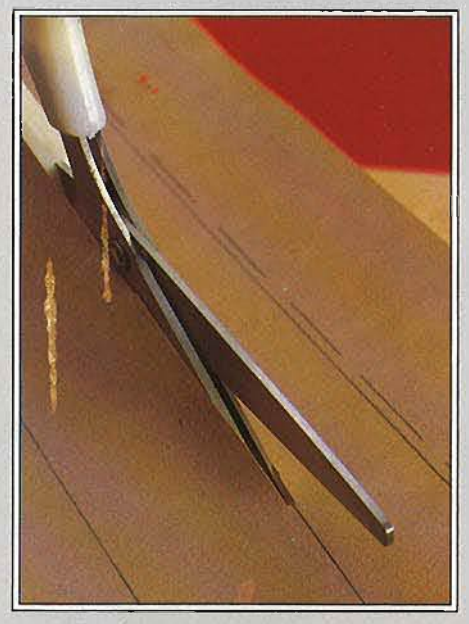
LEADED GLASS

Draw centerlines for locating the beveled glass as shown *right*. Place and align the bevels on the paper, being careful to leave a 1/16" gap where they meet each other. With a sharp pencil trace around the bevels.

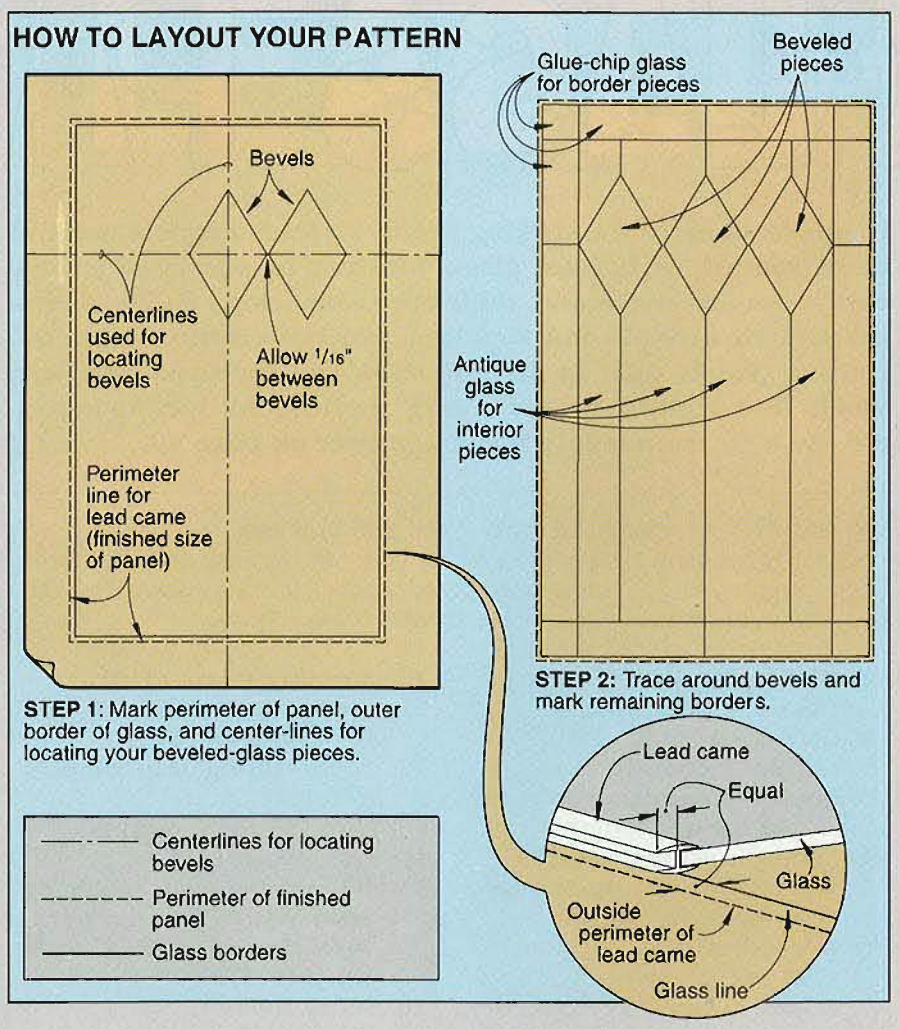
Now, lay out the rest of your pattern as shown *far right*. We refer to this pattern as the *glazing copy* because you'll use it to reassemble your glass pieces later.

Choose your glass for the rest of the pattern. We selected glue-chip glass, a heavily textured clear glass, for the border pieces of the finished panel on *page 32*. You also can substitute a colored glass for these border pieces as we did in the how-to photos throughout this article. For the interior pieces we chose antique glass with subtle distortions.

Now, with carbon paper make a *cutting copy* by tracing the solid lines of your glazing copy onto a piece of heavy paper. With the carbon paper still in place, number each pattern piece. Separate the two patterns, and cut the cutting copy into separate pieces with a three-bladed shears. As shown *below*, the shears remove 3/64" of your pattern to make room for the lead came. Cut carefully and in straight lines. Since your bevel pieces come precut, you must be sure to cut on the *outside* of the lines touching or surrounding the bevels (that's why we placed the bevels 1/16" apart).



Three-bladed pattern shears remove 3/64" of your pattern to allow room for the lead came.


HOW TO LAYOUT YOUR PATTERN
Bevels
Centerlines used for locating bevels
Allow 1/16" between bevels
Perimeter line for lead came (finished size of panel)
STEP 1: Mark perimeter of panel, outer border of glass, and center-lines for locating your beveled-glass pieces.
Glue-chip glass for border pieces
Beveled pieces
Antique glass for interior pieces
STEP 2: Trace around bevels and mark remaining borders.
Centerlines for locating bevels
Perimeter of finished panel
Glass borders
Lead came
Equal
Glass
Outside perimeter of lead came
Glass line

Ready to cut some glass? It's a snap!

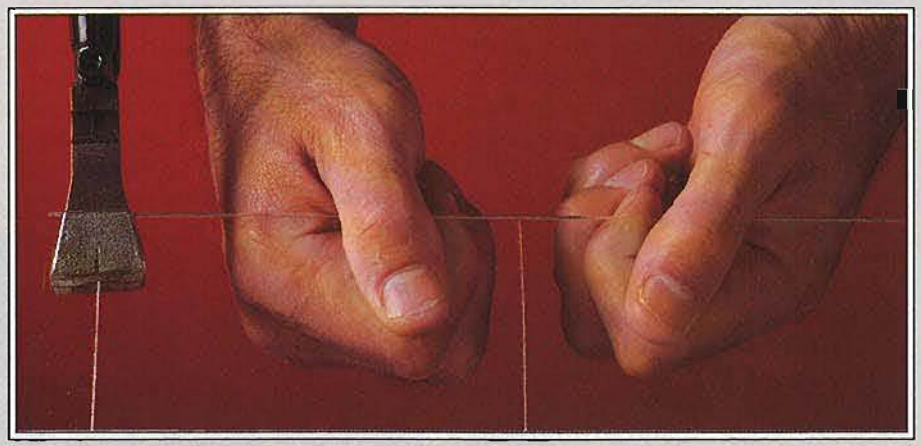
Although cutting glass may seem at first to be a hazardous activity, we found it safe and easy to do once we learned a few basic methods. To get started, attach a cutting-pattern piece to a piece of glass with rubber cement.

If you're working with a textured glass, attach the pattern to the smooth side of the glass. Done this way, the textured side of the glass will face away from you when you look at the front of the completed panel (the side with the bevels facing you). However, if you want the textured side of the glass to face you, just reverse the pattern before attaching it to the smooth side of the glass.

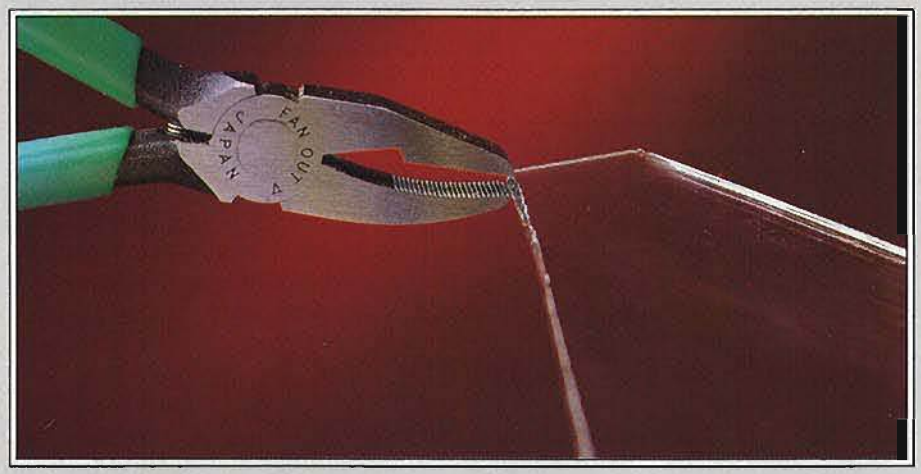
Safety Note: *Always wear eye protection whenever you cut, groze (chip away), or grind glass.*

To make a cut, score along one side of the pattern with your glass cutter. Be careful to keep your score line right alongside the edge of the pattern or just inside it. Use a straightedge to keep your long cuts straight. Now, grasp the glass on either side of the scoring line as shown *opposite page, top*.

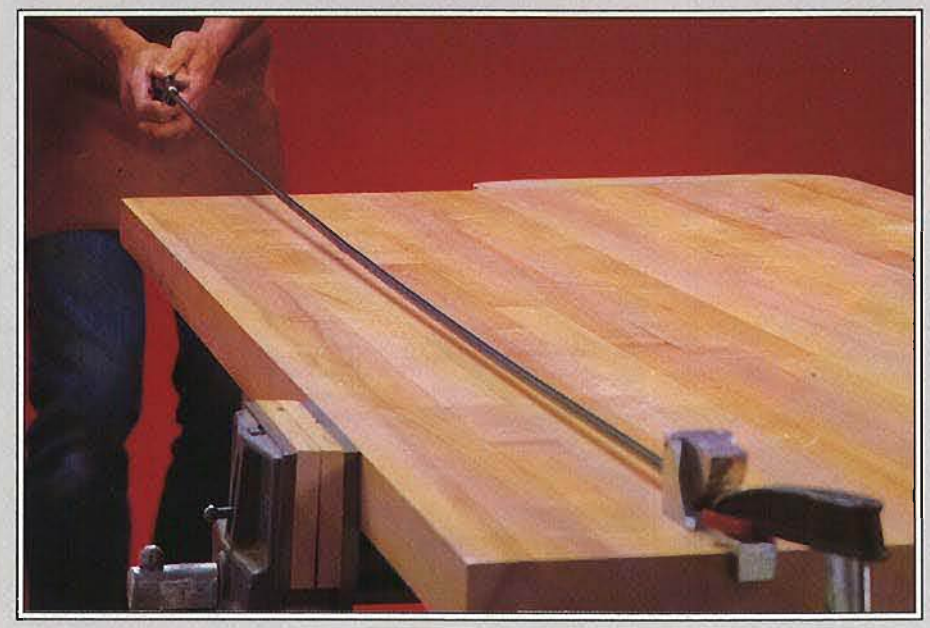
To break the glass, twist both wrists so your palms face upward. This may be hard to do when cut-



You can use a running pliers *(left)* or your hands to break glass along straight scoring lines. The pliers come in especially handy when cutting narrow pieces.

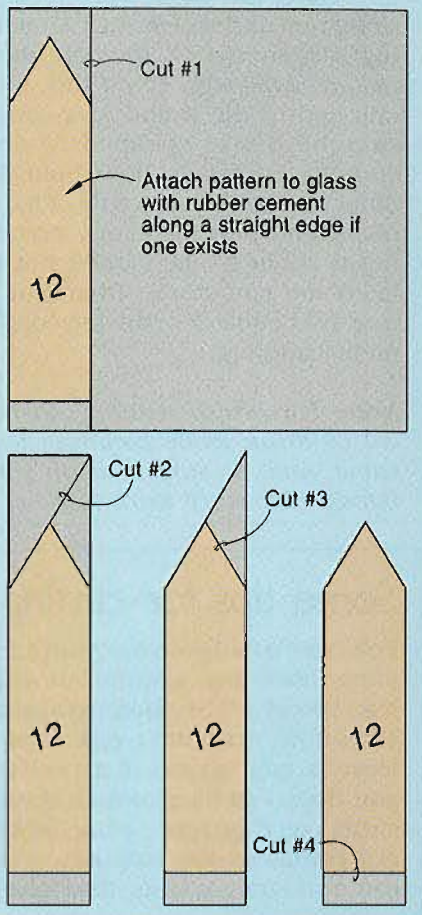


A breaker/grozer pliers helps you trim glass to fit within your pattern lines. Remember to keep the curved jaw down, and take small, controlled bites.



Hold the lead came firmly in a pair of pliers and stretch it 1" for every 1' of length. This quick procedure straightens the came and makes it stiff.

CUTTING GLASS: A TYPICAL SUCCESSION OF CUTS



ting narrow pieces, so at these times use a running pliers as shown on the *left* side of the photo *top*. These pliers have curved jaws that create the same pressure that your hands would otherwise. The drawing *above* shows a typical succession of cuts.

After cutting each piece, check to see if any portion of the glass extends past the pattern. If so, you'll need to carefully gnaw away at these protrusions with a breaker/grozer pliers as shown *left, middle*. When using this handy tool, remember to keep the curved jaw down.

It's time to assemble the glass and lead

To determine how much lead came you'll need, add up the length of all the solid pattern lines

Continued

and add 15 percent. The came comes in limp, 6'-long strands. Before using the came, you need to straighten and stiffen it by stretching it as shown *on the bottom of the previous page.* To do this, lock one end of the strand in a came-stretching vise clamped to one end of your bench. Now, hold the other end solidly in a pair of hand pliers, and pull the came, stretching it about 6". Be careful not to bend the taut came. Then, cut it into two equal lengths for convenient handling.

Note: *For health reasons, do not eat or drink while handling lead came. And, be sure to wash your hands after every work session.*

Set the came strips aside, and staple your glazing copy to a flat piece of ¾" plywood that's at least 2" larger than the paper pattern on all sides. Position the plywood and pattern on a bench so the longest side of the panel faces you. Screw two ⅜"-thick, 1"-wide wooden cleats with straight edges along the dashed lines on the bottom and left side of the pattern. (If you're lefthanded, screw the cleats to the bottom and right side of the pattern.)

With your flush-cutting lead nippers, cut two lengths of lead that fit along the inside corner of the two cleats. (Because solder will cover this joint later, you don't need to miter the ends.) Cut these so they extend slightly past your outside pattern lines. To make a clean cut, hold the came and nippers as shown *below.*

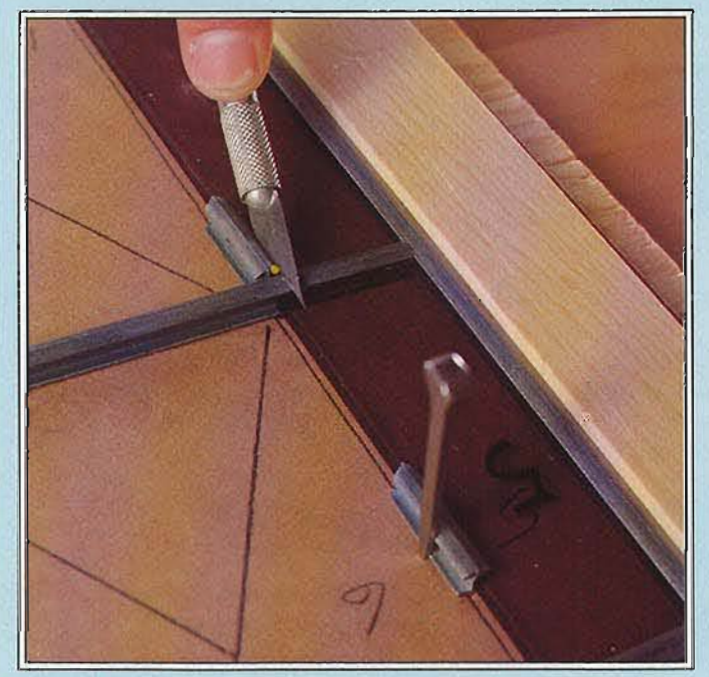
Starting in this corner, tuck your first piece of glass into the channels in the lead came. Tap

Position your lead came and nippers this way for clean cuts.

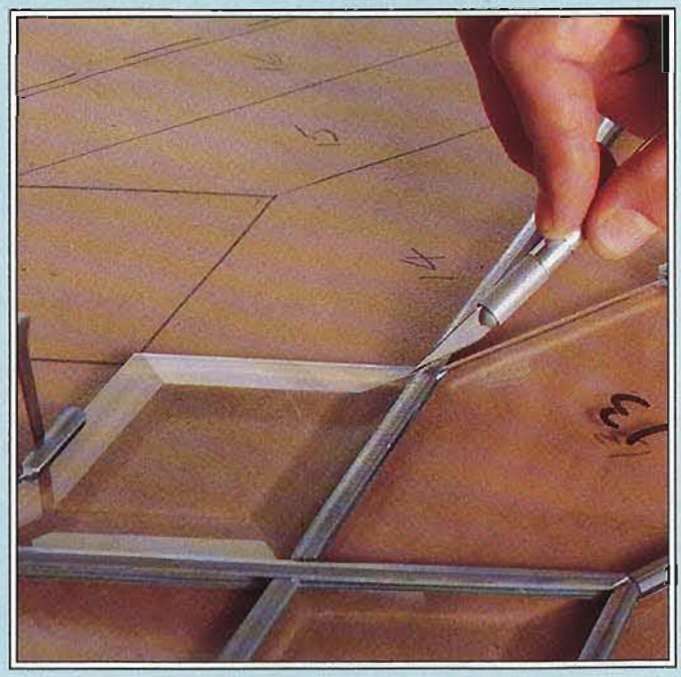
Some tips for cutting and positioning the lead came

For smooth-looking soldered joints later, you should cut your lead pieces so they butt up against each other without a gap. (Never leave a gap greater than 1/16"; if you do, you'll have to fill it with a small piece of lead before soldering.) And, be sure to position the came in straight lines throughout the panel. To ensure your success, follow these tips:

- Hold your glass and came in place with horseshoe nails as you work. Use scraps of came as cushions between the nails and glass. Also use scraps to help you mark the position of your cuts with a slim knife as shown *bottom left.*
- Since solder covers joints completely, you usually don't have to miter lead came at corners. But, diamond-shaped bevels do require mitered cuts. In our sample we cut the miters on the right and left corners of the beveled pieces by eyeballing the necessary angle and nipping the lead until it fit. At



Use lead scraps to accurately guide your cutoff marks. This scrap substitutes for a full-length piece of came that you cut later.

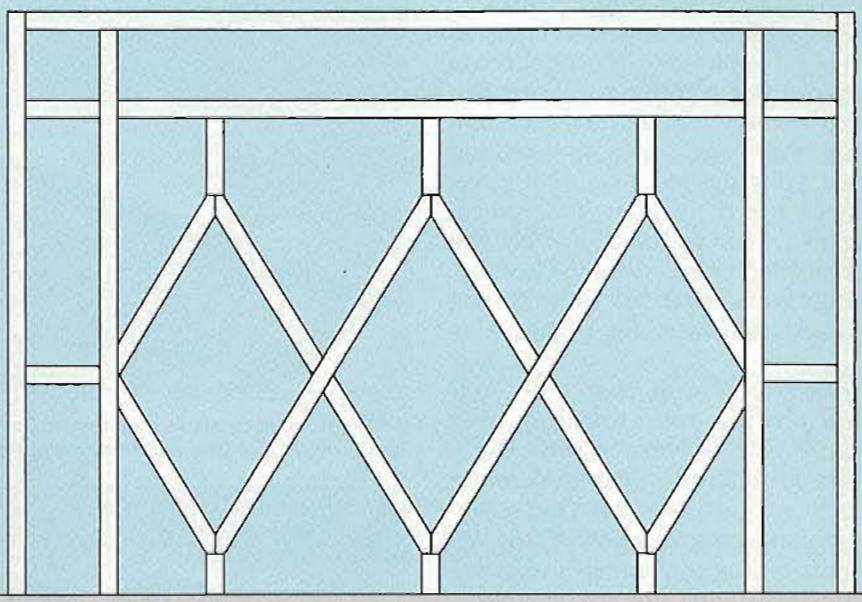


Align your lead cutoff mark with the bevels at the top and bottom of the diamonds.

this piece (and all others) to make sure it goes completely into the channel. Then, check that the piece does not go beyond your pattern lines. If so, trim away some glass with your breaker/grozer pliers, or by lightly touching the edge to a belt sander with 120-grit abrasive. Assemble your panel by working out from the bottom left corner toward the top right corner.

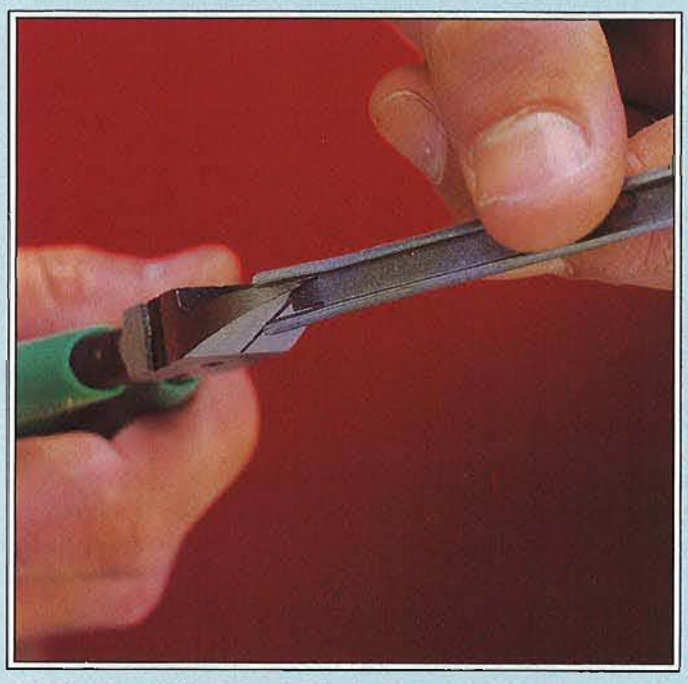
***Note:** Plan the joints of your inside lead pieces so your panel has as many long pieces as possible and a minimum number of joints. The drawing right shows how we worked out the joint placement in our sample panel.*

TYPICAL LEAD CAME JOINTS

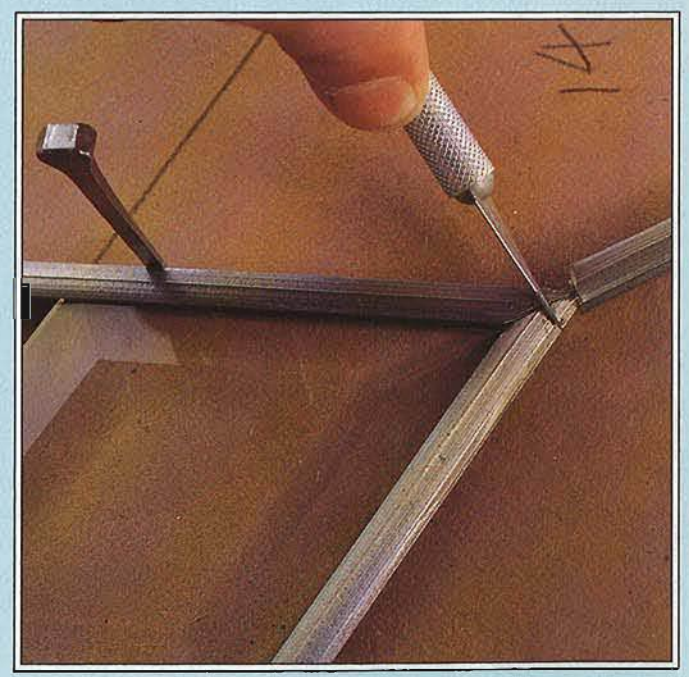


the top and bottom of the bevels, we marked the cut by following the line formed by the intersecting bevels as shown on *the opposite page, bottom right.*

- When cutting miters of 45° or more, you may find that the "heart" of the lead came interferes with your nippers. In these cases, remove a short length of the heart as shown *below left.* To do this, cut along both sides of the heart, then bend the heart back and forth until it breaks off.
- To butt a piece of came up against the mitered joint at the bottom of a diamond-shaped bevel, make cuttoff marks on the mitered pieces as shown *below right.*
- Don't jam your glass and lead tightly together. A slight amount of play helps you adjust the pieces for proper alignment during soldering. However, don't leave so much space between the glass and came that you have visible gaps in the panel.



With your flush-cutting lead nippers, remove the heart of the lead came prior to cutting miters of 45° or more.



Mark and cut mitered lead pieces so they form clean, gap-free joints with butting pieces of came.

LEADED GLASS

Add two more cleats to make your project square and secure prior to soldering. (Remove the horseshoe nails before positioning the cleats.)

Add solder for solid joints

With your glass and lead came in place, tack two more cleats around the perimeter of your pattern as shown *right*. Make certain that the panel does not extend past your dashed line. If it does, check the fit of your glass pieces against your pattern, and readjust as needed. Also, double-check to make sure that all of the lead pieces align in straight rows.

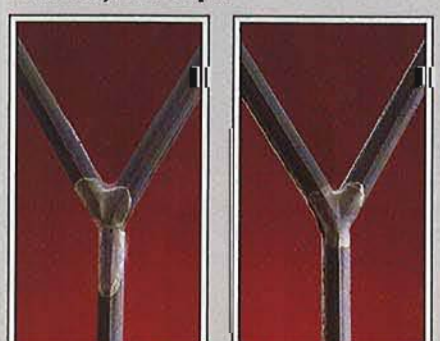
Note: You'll find that with time and practice your soldering technique will improve greatly, so it pays to practice on scrap came.

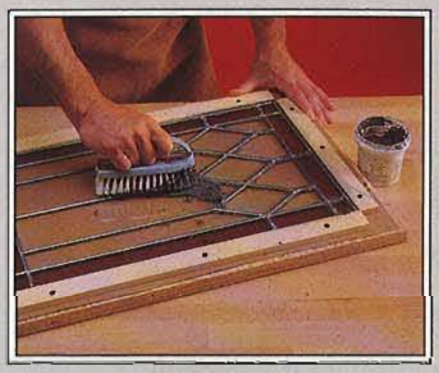
Brush some flux on all of the joints on the top side of the panel. The flux helps the solder adhere and flow into the joint.

When your soldering iron becomes hot enough to melt the solder, hold the solder between the joint and the soldering iron as shown on *page 32*. The iron will quickly melt the solder. Hold the soldering iron on the joint for two or three seconds, until the solder flows evenly across the joint. You may need to move the iron in a small circular motion to smooth the solder, but be careful not to spread the solder more than ¼" past the joint. Then, lift the iron straight up and off the joint.

Use no more solder than necessary for a smooth joint. (See the photo *below* for examples of well done and poorly executed soldered joints). Try to keep the joint as flat as possible. To fill small gaps, turn the tip of your soldering iron vertical before lifting it off the gap.

Strive for flat, smooth, small, and unobtrusive solder joints such as the example at *right*. Shown at *left* is a poorly soldered joint. Oops!





Work the glazing cement under the came with a scrub brush.

Scrub the whiting into your panel to clean and polish it.

When you finish soldering, wipe away all excess flux. Temporarily remove two cleats and flip the panel over. Flux and solder the joints on the other side. Check both sides to make sure you didn't miss any joints.

The final steps: glazing and cleaning

To prevent the glass from rattling within the lead channels, and to weatherproof the panel, you need to work glazing cement into the space between the lead came and the glass. To do this, apply a glob of cement to the panel and work it under the lead, using a scrub brush as shown *above left*.

After glazing both sides, sprinkle some whiting (powdered chalk) onto one side and work it around with a clean scrub brush as shown *above right*. The whiting will pick up the excess glazing cement and leave the glass looking smooth and polished. Repeat this procedure on the other side of the panel. Lay the panel on a flat surface and let the cement cure for about 24 hours.

With a toothpick or other pointed object, remove the excess cement from along the edges of the lead came. Finally, lightly sprinkle some whiting on the panel and scrub it again with a clean brush. You're done! (For information on how to install leaded glass panels in a wood frame, see the instructions in the Pendulum Clock project on *page 42*).

Buying Guide:

For a complete catalog of leaded-glass supplies, including tools, glass, books, videos, kits, and designs, contact Delphi Stained Glass, 2116 E. Michigan Ave., Lansing, MI 48912; 800/248-2048.

Written by Bill Krier with Jim Downing Technical consultant: Jeff Kolker
Photographs: Hopkins Associates Drawings: Jim Downing; Kim Downing

WORTH-EVERY-MINUTE

WALL CLOCK

Build this statement in leaded glass

Print this article

Now that you've read our leaded-glass technique article on the preceding pages, why not practice what we've preached by building this beautiful wall-mounted pendulum clock? You'll be surprised how easy the whole project goes together (we've kept the clock and glass-panel construction simple on purpose). See the Buying Guide at the end of the article for our source of supplies.

***Note:** See the preceding techniques article for information on assembling the glass-panel insert used in the door of this clock.*

Let's start with the solid oak clock case

1 From ¾" oak stock, cut the clock case sides (A) and upper and lower members (B) to the sizes listed in the Bill of Materials.

2 Cut or rout a ¾" rabbet ¼" deep across both ends of each side piece (A). Cut a ¼" rabbet ½" deep along the back inside edges of the sides (A). See the Exploded View drawing for reference.

3 Sand the inside surfaces of parts A and B. Glue and clamp the pieces. Check for square and that the *front* edges are flush.

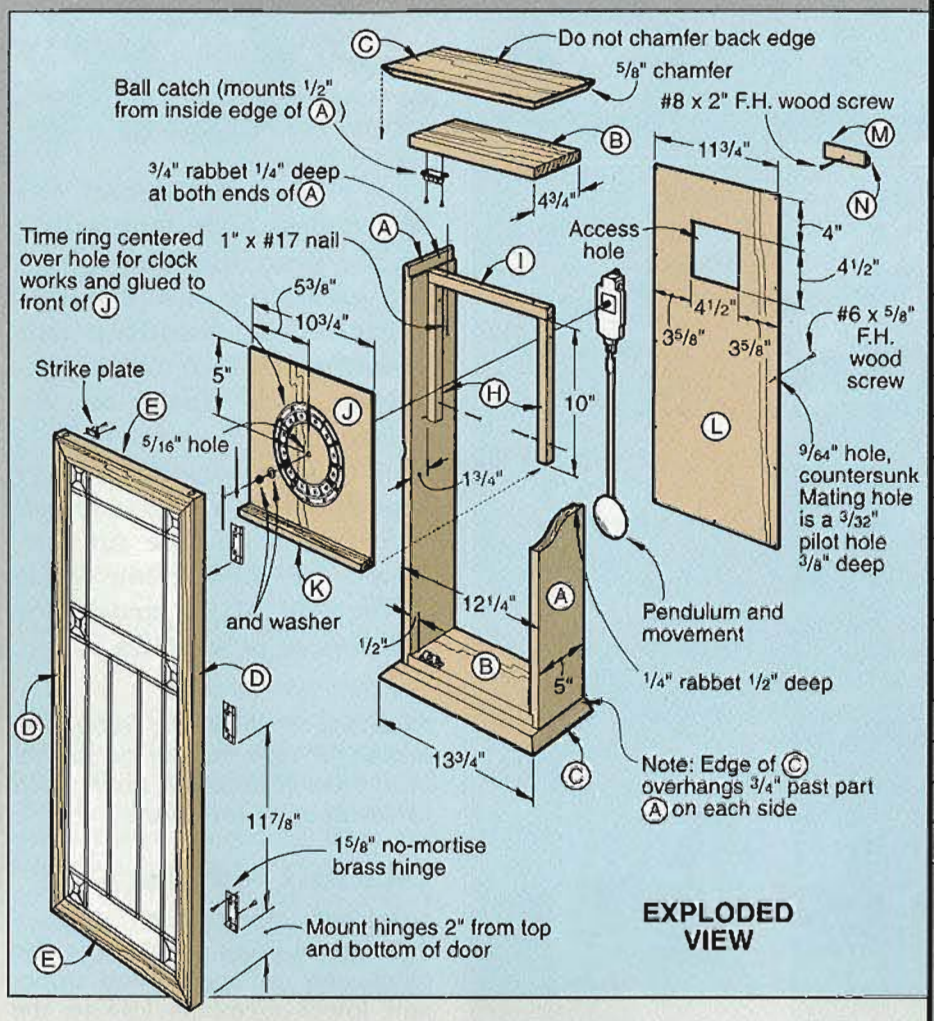
4 Cut the top and bottom pieces (C) to size.

5 Tilt your tablesaw blade 45° from vertical, position your fence, and cut a chamfer along the front and side edges of the top and bottom. Use a pushblock for stability and to minimize grain tear-out. Sand the chamfers to remove the machining marks.

6 Center the top and bottom pieces (C) side-to-side on the top and bottom of the clock case.

Continued

WALL CLOCK



Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
CASE					
A sides	¾"	5"	28"	O	2
B U & L members	¾"	4¾"	11¼"	O	2
C top & bottom	¾"	6½"	13¾"	O	2
DOOR					
D* stiles	¾"	1¼"	27¾"	O	2
E* rails	¾"	1¼"	12¼"	O	2
F stops	3/16"	¼"	25¾"	O	2
G stops	3/16"	¼"	10¼"	O	2
CLOCK FACE ASSEMBLY					
H supports	¾"	¾"	10"	O	2
I support	¾"	¾"	10¾"	O	1
J face	¼"	10¾"	10¾"	OP	1
K ledge	¾"	1¼"	10¾"	O	1
L back	¼"	11¾"	28"	OP	1
HANGING BLOCK					
M front	⅜"	2"	4"	O	1
N back	⅜"	1"	4"	O	1

*Initially cut parts oversized. Then, trim to finished size according to the how-to instructions.

Materials Key: O–oak, OP–oak plywood

Supplies: ¾"×#17 brads, 1"×#17 nails, ¼" dowel stock, #8×2" flathead wood screws, #6×⅝" flathead wood screws, stain, finish.

Then, with the back edges flush with the sides (A), glue and clamp them in place.

Now, let's construct the door frame

1 Cut the door stiles (D) and rails (E) to size plus 2" in length.

2 Cut or rout a ¼" rabbet 9/16" deep along the back edge of each piece. See the Door drawing and accompanying Glass Stop detail for reference.

3 Miter-cut the stiles and rails to length. Glue and clamp the pieces together, checking the door frame for square and that it lies flat.

4 Using a doweling jig for alignment, drill a ¼" hole in each corner of the door frame where shown on the Door drawing.

5 Cut four pieces of ¼" dowel stock to 1⅜" long. Sand a chamfer on one end of each dowel. Apply glue and insert the dowels—chamfered end first—into the dowel holes just drilled. Later, trim the protruding ends of the dowels flush with the edges of the door frame.

6 Assemble the glass insert for the door using the method described in the techniques article and the Leaded-Glass Pattern shown on the *opposite* page.

7 Cut the glass stops (F, G) to size, miter-cutting the ends.

Next, machine the remaining pieces

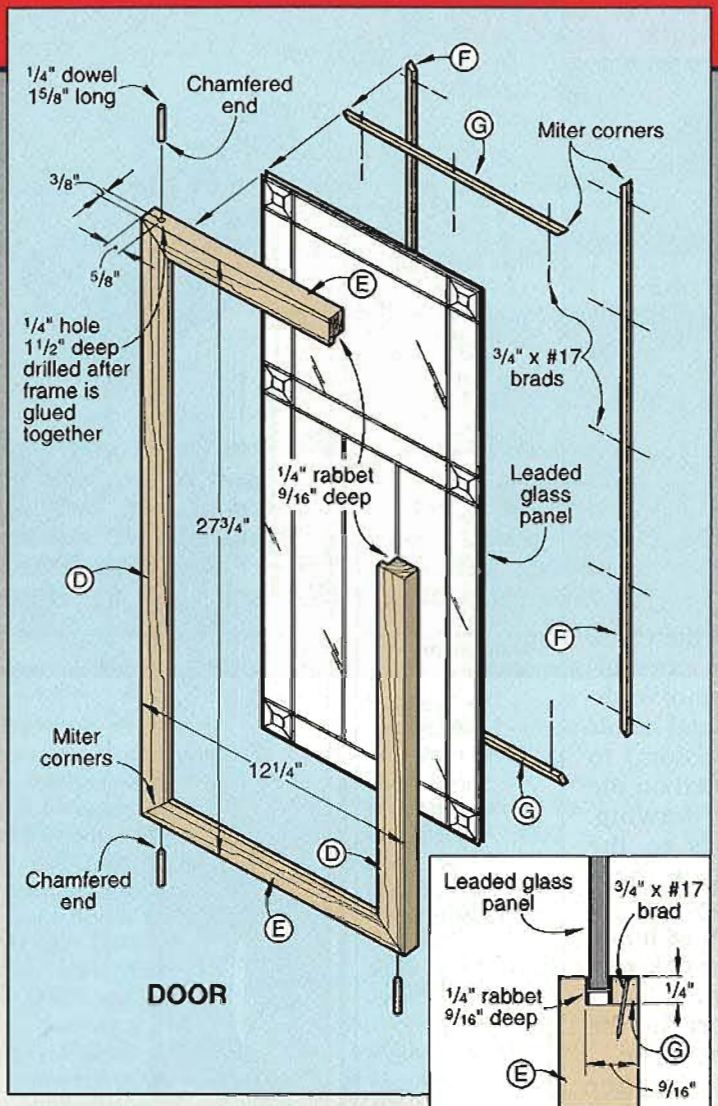
1 Cut the clock-face supports (H, I) to size. Drill pilot holes, then glue and brad them to the inside of the clock case where shown on the Exploded View drawing. Immediately remove excess glue.

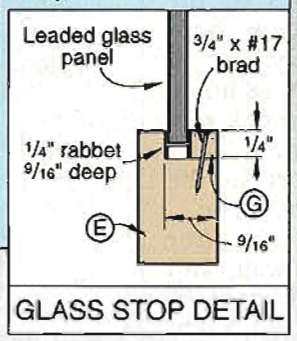
2 From ¼" oak plywood, cut the clock face (J) to size. Check the fit in the opening. Then, mark the shaft hole centerpoint where dimensioned on the Exploded View drawing, and drill the shaft hole through the face. Check the fit of the clock shaft through the hole. Some movements might require a different sized hole.

3 Cut the clock-face ledge strip (K) to size, and glue and clamp it to the front of the clock face.

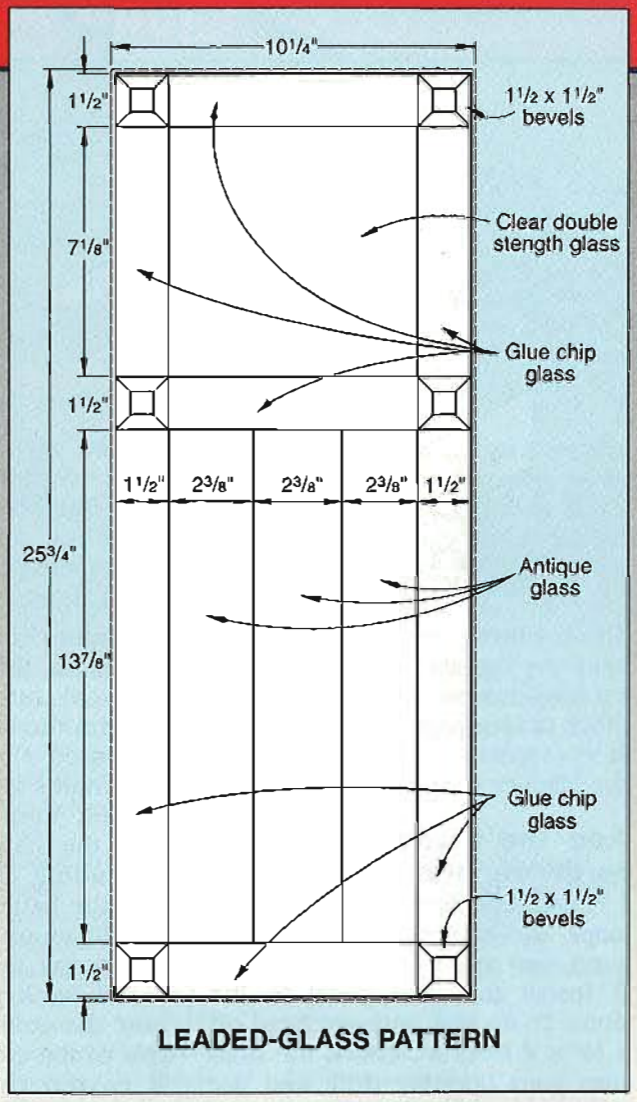
4 Glue and clamp the clock-face assembly (J, K) to the supports (H, I).

5 Mark the finger recess on the front outside edge of the left-hand side piece (A) where shown on the Finger Recess drawing. Wrap sandpaper around a 1"-diameter



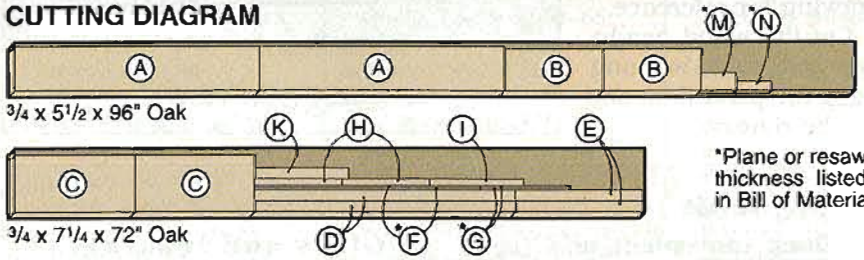


GLASS STOP DETAIL

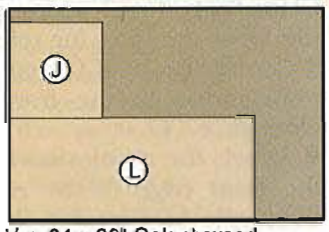


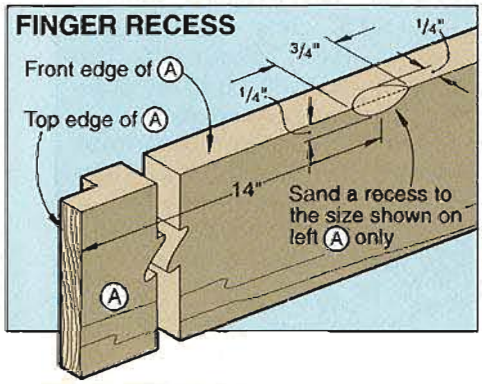
LEADED-GLASS PATTERN

CUTTING DIAGRAM



*Plane or resaw to thickness listed in Bill of Materials





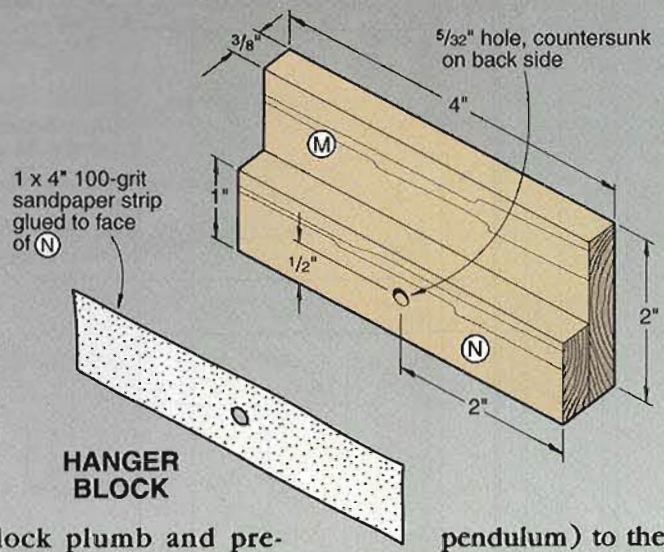
Wrap sandpaper around a 1" dowel and sand the finger recess to shape.

dowel, and sand the recess to shape as shown in the photo *left*.

6 Measure the rabbeted opening, and cut the clock-case back (L) to size. Lay out the 4½"-square access opening, drill a blade-start hole, and cut the opening to size.

7 Cut the clock-hanger block parts (M, N) to size. Drill mounting holes and glue and screw the parts. To help keep the completed

Continued



clock plumb and prevent the hanger block from rubbing against the wall, adhere a piece of sandpaper to the exposed face of part N where shown on the Hanger Block drawing.

Add the finish, glass panel, hardware, and movement

1 Finish-sand the clock case, door, stops, and back panel. Stain as desired, and apply a clear finish.

2 Install the glass panel in the door. To do this, snip the head off a ¾"×#17 brad, chuck the brad into your portable drill, and use the brad as a bit to drill angled pilot holes through the glass stops and into the door frame. See the Glass Stop detail accompanying the Door drawing for reference.

3 Center and brad (or epoxy) the timing ring to the front of the clock face (J).

4 Attach the no-mortise hinges to the front edge of the right-hand door stile (D) where dimensioned on the Exploded View drawing. Then, fasten the hinges to the door stile. When positioning the door for attaching the hinges to the clock case, leave an ⅛" gap between the clock case and top and bottom of the door.

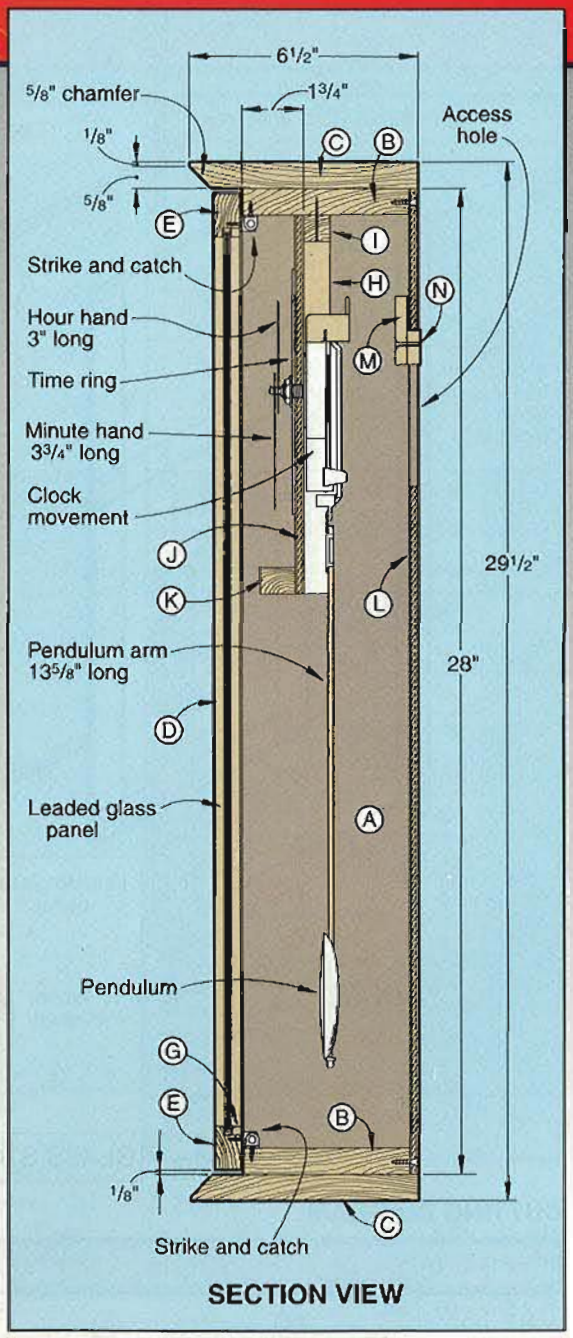
5 Attach the ball catches to the clock case and mating positions on the back of the door.

6 Stick the clock shaft through the hole in the clock face (J), and fasten the movement (minus the pendulum) to the clock face with the external-threaded nut and washer. Trim the metal hands (we used a scissors) to the lengths stated on the Section View drawing. Add the hands to the protruding clock shaft. Add the battery.

7 Drill mounting holes, and screw the oak plywood back panel (L) into the rabbet in the rear of the clock case.

8 Fasten the hanger block to the wall, and slip the clock onto it. See the Section View drawing for reference.

9 Cut the wood pendulum arm to 13⅝" long. Hang the pendulum and set the time.



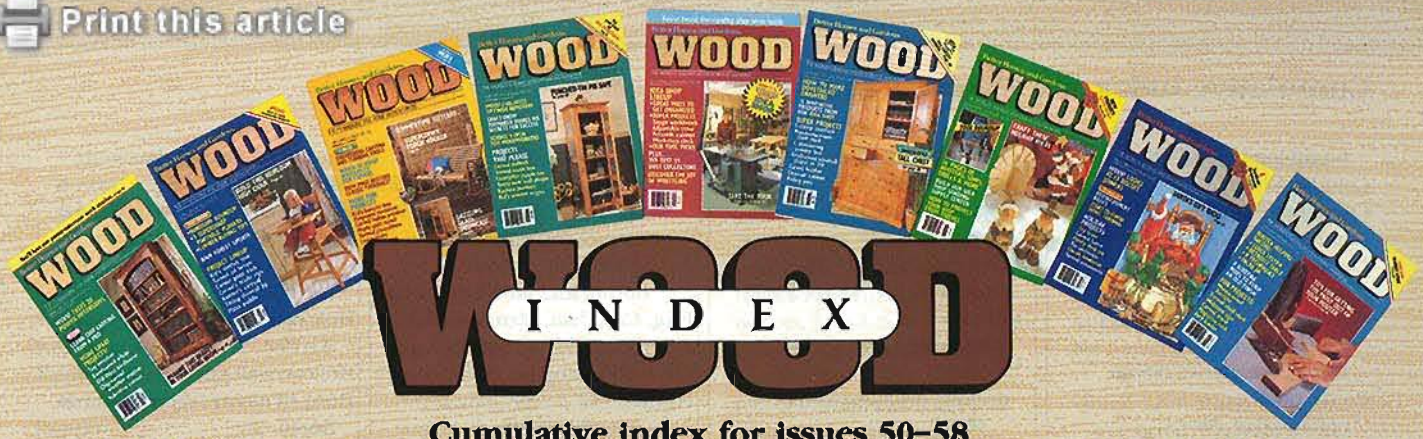
Buying Guide

• **Clock movement and hardware.** Mini-quartz movement with wood pendulum and brass disc, etched time ring, straight hands, antique brass no-mortise hinges, and two polished-brass ball catches. Stock no. 4910, $29.95 plus $4.95 shipping and handling per order. Turncraft Clocks, Inc., P.O. Box 100, Mound, MN 55364-0100. Or call 800/544-1711 to order.

• **Glass and leading.** 6—1½×1½" beveled-glass squares, 1—10×15" clear semi-antique glass, 1—18×24" single chip glass, 1—8×10" clear double-strength glass, 3—6' pieces ¼" RH lead came. Kit no. 8030WM. $28.95 ppd., Delphi Stained Glass, 2116 E. Michigan Ave. Lansing, MI 48912. Or call 800/248-2048 to order.

Produced by Marlen Kemmet Project Design: Cary Stage Photographs: John Hetherington Illustrations: Kim Downing

Print this article



WOOD® INDEX

Cumulative index for issues 50–58

If you save back issues of WOOD® magazine, this index will help you quickly find articles in issues 50–58. We kept it simple. For instance, after the listing "Baskets, split-ash," you'll find the numbers 54:35–39. This means the article appears in issue 54, pages 35–39. The in-magazine index for issues 1–8 appeared in issue 9, 9–16 in issue 17, 17–24 in issue 25, 25–32 in issue 34, 33–41 in issue 43 and 42–49 in issue 52. Watch for the advertisement for our all-new cumulative index in an upcoming issue.

A–C

Acetone, toluene, methanol finish removers, 53:57, 58, 59
Air hose, reel for, 55:54
Air sweep, 57:28
Amish chairs, 51:35–39
Anchors, wall, 51:28
Angle bevels, 50:22–24, 90
Antique finish, 53:52
Bandsaws, 51:66–71
  blades, tightening reminder, 54:12
  Cool Blocks for, 51:67
  grooved tables on, 55:9
  through-dovetail joints made with, 51:44–53; 54:8
  trueing boards with, 51:21; 56:52–53
Baskets, split-ash, 54:35–39
Battery-powered tools:
  charger for, 51:30
  drills, 56:64–65
  recycling of batteries, 55:88
Bear wall plaque, 53:74–75
Belt sanders, 56:70–71
  belts for, 56:52; 58:12
  cord, suspending, 51:23
Bench grinders, 55:12
Bevels, angle, 50:22–24, 90
Bird feeders, 58:27–31, 68–69
Birdhouses, 50:76–77; 57:12
  waste redwood for, 58:27–31
Biscuit joinery, 57:48–53
  buymanship, 57:42–47
  with router, 57:52–53; 58:54–55
Blanket chest, 58:56–61
Blocks box, 52:68–69
Boards:
  buymanship, 51:72–73; 54:6
  carrying racks for, 57:16
  grades of, 51:73; 57:83
  trueing, 51:21
Bookcase, 50:38–43; 56:12
Bookends, 57:72–73
Bowls, turning, 57:77–80
  with green wood, 50:72–75
  for potpourri, 52:42
Boxes:
  booster, child's, 52:68–69
  jewelry, 55:58–61; 51:16
  music, 50:5; 53:69–71
  tissue, 54:50–51
Box-joint jig, 53:77
Brad-nailer, 52:23
Brad-point bits, 50:90
Brushes:
  disposable, 52:23; 56:22
  stencil, substitute, 50:20
Build-a-Toy™ contest, 55:8, 68–70, 72–73; 57:60–65
Burnisher for scrapers, 56:50
Butternut, 55:23–24
Buymanship, 56:64–79
  bandsaws, 51:66–71
  biscuit joiners, 57:42–47
  boards, 51:72–73
  drill presses, 56:66–67
  drills, cordless, 56:64–65
  dust collectors, 54:42–47
  finish removers, 53:54–59
  jointers, 56:68–69
  mitersaws, power, 50:48–55
  planers, thickness, 51:54–55; 56:78–79
  routers, 56:72–73
  sanders, belt, portable, 56:70–71
  scrollsaws, 56:74–75
  tablesaws, 56:76–77
Cabinets:
  air-filtration, 55:48–51, 74
  curio, 52:47–51
  mitersaw, 50:56–61
  pie safe, 53:47–52
  system for workshop, 54:32, 74–79; 58:10
Calendar/clock, 50:5
Caliper holder, 54:78–79
Carvers:
  Chesser, G., Jr., 55:25–29
  designs:
    Barton, W., 50:44, 46–47
    Hagensick, J., 53:60–63
    Harrington, E., 56:40–41
    Lockwood, C., 57:38–41
    Refsal, H., 56:44–47
    Rosauer, H., 55:44–47
    Sanders, G. O., 58:34–37
    Thurman, B. K., 53:53
  Enlow, H., 52:39–41
  Harney, R., 50:33–37
  Harrington, E., 56:37–39
  Tweet, R., 54:40–41
Carving:
  chip carving, 50:44–47
  daffodil, 53:60–63
  decoys, 55:25–29
  feather pin, 55:44–47
  intarsia, 56:37–41
  kachina-style pendant, 53:53
  Pilgrims, 56:44–47
  positioner for, 55:54
  relief carving, 50:33–37
  roughouts for, 52:32–35
  Santa on skis, 56:48–49; 57:38–41
  thumb protection, 50:14
  tools, sharpening, 52:39–41
  trade sign, 51:40–43
  trout, 58:34–37
  whittling, 54:40–41
Caterpillar puzzle, 53:72–73
C-clamp coatrack, 55:62–63
Ceiba, 57:84
Chairs:
  Amish, 51:35–39
  high chair, 51:56–63; 53:14
  joints, loosening, 57:82
Cherry, finishing, 55:78
Chestnut, 52:88
Chests:
  oak blanket, 58:56–61
  tall, Shaker-style, 55:36–43
Children's items. *See also Toys.*
  booster box, 52:68–69
  clothes tree, 51:78–79
  high chair, 51:56–63; 53:14
Chisel, corner, 54:24
Chisels:
  racks, 51:10; 55:76
Christmas items:
  ornaments, 57:66–67, 70–71
  Santas, 56:48–49; 57:38–41
Chuck-key handle, 54:18
Chucks, lathe, 55:54–55
Circular saw blades, 55:20
  holder for, 58:16
Circular saws, portable:
  loosening blade on, 52:10
  sheet goods cut with, 50:14
Clamps:
  collectible, 53:87
  flexible, 52:8; 57:12
  jig for, 53:22
  pipe, use of, 51:16, 20
  Quick-Grip, 56:52–53
  from scrapwood, 51:20
  track system, 58:20
Clocks:
  calendar, 50:5
  man-in-the-moon, 55:64–65
  turned, 58:70–72
  workshop, 54:80–81
Clothes tree, child's, 51:78–79
Coatrack, C-clamp, 55:62–63
Collectible tools:
  clamps, hand, 53:87
  miter trimmer, 50:31

Cumulative index for issues 50 to 58

pump-log tools, 57:86
Column, classic, 52:54–55
Combination planes, 51:82
Combination squares, 55:56
Cookie mold, 57:12
Cordless tools:
battery charger for, 51:30
drills, 56:64–65
recycled batteries, 55:88
Cords, power:
color-coded, 58:12
LED, 50:27
safety with, 58:8
Corner chisel, 54:24
Coves, cutting, 52:8; 53:12
Crackled finishes, 51:24
Craftsman Close-ups:
baskets, split-ash: S. Zch, 54:35–39
birdhouses and feeders, redwood: G. Schrodt, 58:27–31
carved intarsia: E. Harrington, 56:37–39
chairs, Amish: D. Swarey, 51:35–39
decoys: G. Chesser, Jr., 55:25–29
marquetry: D. Peck, 52:27–31
relief carving: R. Harney, 50:33–37
toys: H. Gorczynski, 53:37–41
violins: B. Rohde, 57:33–37
Curio showcase, pedestal, 52:47–51
Cutting diagrams, making, 55:78
Cutting instructions, taped-on labels for, 55:12

D–E

Dado bits for routers, 52:21
Daffodil, carved, 53:60–63
Darah darah, 53:33
Decorations, Christmas tree, 57:66–67, 70–71
Decoys, 55:25–29
Dents, removing, 51:6
Desk set, 57:54–59
Dibasic ester finish removers, 53:57, 59
Discs, sanding, 57:29
Distressed finish, 53:52
Dolly for sheet goods, 54:17
Dovetail joints:
bandsawed, 51:44–53; 54:8
drawers with, 55:30–35
with Incra Jig, 58:32–33
Dowels:
cutting, 53:18; 57:25
gauge for selecting, 58:15
round-overs on, 57:14
test-fitting, 55:15
Drawers:
dovetailed, 55:30–35
organizers for, 51:16; 55:57
Drill bits:
brad-point, sharpening, 50:90
drilling/driving system, 56:54
Forstner, 56:50
holders for, 54:32
Drill presses, 56:66–67
chuck-key handle for, 54:18
circle cutters used with, 52:6; 56:8
Forstner bit holders, 54:32
hole-spacing jig for, 51:19
Drills:
bits for. *See Drill bits.*
cordless, 56:64–65
pilot holes, marked, 55:15
portable electric, 57:96
as screwdriver, attachment for, 57:26
screwdriving/drilling system for, 56:54
Drum sanders:
sandpaper strips for, 56:23
Dust collectors and dust control, 54:42–47, 62; 58:78
air-filtration cabinet, 55:48–51, 74
air sweep for, 57:28
remote switches for, 50:6
for routers, 50:16
for scrollsaws, 53:24
shop vacuums, remote hose hookups for, 50:18
Edge-joined boards:
biscuit joiner for, 57:50
Enamel paints, water-based, 56:57

F–G

Feather boards:
for radial-arm ripping, 56:18
for routing, 58:47, 51
Feather pin, 55:44–47
Fences for routers, 58:50
system, 58:44–47, 81
Finishes:
antique look, 53:52
cherry, 55:78
crackled, 51:24
linseed-turpentine-varnish (LTV), 54:48–49
milk paint, 51:8
oil-based, bleeding, 50:8
removers, 53:54–59
use of, 58:62–63, 76
solvents, dispenser for, 55:56
water-based, 50:91
enamel paints, 56:57
gelled stain, 56:52
storing and labeling, 53:12
Flag, Canadian, plan for, 55:10
Floor mats, 54:28; 55:57
Flush-trimming bit, 53:28
Forests:
logging operations, 50:62–67; 53:14, 96
rain forest, concern for, 51:80; 53:96; 57:9
Forstner bits, 56:50
holders for, 54:32
Frames:
clamping jig for, 53:22
photo, 52:70–71
router tech., 58:53–55
for wall plaque, 53:74–75
Fretsaw table, bird's-mouth, 52:29
Furniture:
Amish chairs, 51:35–39
blanket chest, 58:56–61
bookcase, 50:38–43; 56:12
curio showcase, 52:47–51
drawers:
dovetailed, 55:30–35
use of, 58:62–63, 76
high chair, 51:56–63; 53:14
legs
leveling, 53:68; 57:11
tapering, 56:18
pie safe, 53:47–52
repair, 51:6; 57:82
rocker, porch, 52:58–63
Shaker, 57:12
book about, 54:94
tall chest, 55:36–43
workshop, 50:56–61; 54:64–79; 55:48–51, 74
Glue:
applying, 52:15
steadied with, 52:10
Gouges, grinding, 52:36–38, 39–40
Green-wood turning, 50:72–75
Grinders, 55:12
Grinding of tools, 52:36–38, 39
Gum arabic, 54:92

H–I

Hamper, woven, 58:38–43
Handles, turned, 56:88
Handsaws:
fretsaw, bird's-mouth table for, 52:29
pull-stroke, 51:29
rack for, 57:18
Handscrews, antique, 53:87
Hand tools. *See Tools.*
Hickory, 51:33–34
High chair, 51:56–63; 53:14
Hold-downs:
anti-kickback, 55:55
for router workpiece, 51:21
Hole-spacing jig for drill press, 51:19
Hollow-wall fasteners, 51:28
Horn of plenty, carved intarsia, 56:40–41
IDEA SHOP, 52:1; 54:1, 58–63; 58:8, 10–11, 78, 80
air-filtration cabinet, 55:48–51, 74
clock, 54:80–81
coatrack, C-clamp, 55:62–63
masonary screws, 57:20
router aids, 58:44–49, 81
stool, 54:70–73
tools and supplies:
holders, 55:76; 56:80–84; 57:30; 58:16
innovations, 55:54–57
list, 54:82–85, 87
wall cabinet system, 54:32, 74–79; 58:10
workbench, 54:64–69
Incra Jig, 58:32–33
alternative to, 58:74
Indian kachina pendant, 53:53
Inlaid music box, 53:69–71
Insurance, product liability, 57:82
Intarsia, carved, 56:37–41

J–M

Jewelry:
pendant, kachina, 53:53
pin, feather, 55:44–47
Jewelry box, bandsawed, 55:58–61
Jigs:
box-joint, 53:77
clamping, 53:22
dovetail, 51:49–51; 54:8
stand for, 55:33
use of, 51:44–48
hole-spacing, 51:19
Incra Jig, 58:32–33
JoinTECH, 58:74
precision positioning, 52:10
Jointers, 56:68–69
knives, installing, 52:56–57
Joints and joinery:
biscuit, 57:42–53; 58:54–55
box, jig for, 53:77
dovetail, 58:32–33
bandsawed, 51:44–53; 54:8

drawers with, 55:30–35
dowel, test-fitting, 55:15
fancy, jig for, 52:10
with Incra Jig, 58:32–33
screw, holes for, 55:12, 15
spline, for edging, 57:82
Kachina pendant, 53:53
Knitting carrier, 51:52–53
Knobs, adjustment, easier turning of, 50:14, 19; 58:14
Lamps:
magnifier, 55:57
oil, turned, 51:64–65
reading, 56:20
table, 56:58–59
Lathes, 56:28
chuck for, 55:54–55
small, 51:8; 56:53
Legs:
leveling, 53:68; 57:11
tapering, 56:18
Letter openers, 54:52–53
Level, 55:55
Linseed-turpentine-varnish (LTV) finish, 54:48–49
Logging:
Anderson-Tully Company, 50:62–67; 53:14; 57:8
Lubricants, 56:51
Magazine rack, 58:64–65
Maple species, 55:78
Marquetry, 52:27–31; 55:88
Mats:
floor, 54:28; 55:8, 57
Metal:
punched-tin items, 53:42–52, 74–75; 57:8
Methylene chloride (MC)
finish removers, 53:54–59
using, 58:62–63, 76
Mildew, eliminating, 50:91
Milk paint, 51:8
Mitered joints with biscuit joiner, 57:51, 52
Miter fence for radial-arm saw, 52:18
Mitersaws, power, 50:48–55; 56:51; 58:78
cabinet for, 50:56–61
stops for, 52:16
Miter trimmer, 50:31
Moldings:
miter-cutting, 50:30
small, routing, 58:52
Mortiser, hollow-chisel, 56:56
Mortises, corner chisel, 54:24
Motors, electric, 52:52–53
Music boxes, 50:5; 53:69–71

N–P

Nail gun, 52:23
N-methyl pyrrolidone (NMP)
finish removers, 53:57, 59
Oil lamps, turned, 51:64–65
Oregon School of Arts and Crafts, Portland, Ore., 53:64–65
Ornaments, Christmas:
scrollsawed, 57:66–67
turned, 57:70–71
Paintbrushes:
disposable, 52:23; 56:22
stencil, substitute, 50:20
Paints:
enamel, water-based, 56:57
milk, 51:8
spray:
crackling, 51:24
Para rubber tree, 52:25; 56:8
Particleboard, laminating, 55:9
Patterns, enlarging, 56:16
Pedestals:
classic column, 52:54–55
curio showcase, 52:47–51
Pendant, kachina, 53:53
Periscope, toy, 57:68–69
Photo frame, 52:70–71
Pie safe, 53:47–52
Pilgrims, carved, 56:44–47
Pin, feather, 55:44–47
Pincushions, turned, 52:74
Pine, eastern white, 53:35–36
Pizza paddle, 51:76–77
Planers, 51:54–55; 56:78–79
carrier board, use of, 56:94
router as, 53:20
Planes:
antique, 51:82; 52:7; 56:96
holder for, 50:9
Plaques:
wall:
horn of plenty, 56:40–41
teddy bear, 53:74–75
windmill, 55:66–67
Plate (biscuit) joinery, 57:42–53; 58:54–55
Plate rack, 51:74–75; 54:6
Plow planes, 51:82
Plug cutters, 54:26; 55:56–57
Plunge routers, crank, 50:19
Plywood:
cutting, 50:14
dado bits for, 52:21
dolly for, 54:17
edging, 57:82
Pocketknife/rule, 56:56
Porch rocker, 52:58–63
Potpourri bowl, turned, 52:42
Power tools:
battery charger for, 51:30
for biscuit joinery, 57:42–53; 58:54–55
brad-nailer, 52:23
color-coded cords for, 58:12
DeWalt, 54:22
Electro-File, 56:54
grinders, 55:12
jointers, 56:68–69
knives, 52:56–57
lathes, 51:8; 56:28, 53
lubricants for, 56:51
mortiser, 56:56
motors, 52:52–53
planers, thickness, 51:54–55; 56:78–79, 94
pulleys, 50:8; 54:7
rotary tool, support for, 57:30
saws. *See also Bandsaws; Mitersaws, power; Radial-arm saws, Scrollsaws; Tablesaws.*
circular, portable, use of, 50:14; 52:10
sabersaws, cutting, 50:19
shapers, raised-panel-door set, for, 56:57
Pulleys, power tools, 50:8; 54:7
Pump-log tools, 57:86
Punched tin, 53:42–46; 57:8
pie safe, 53:47–52
teddy bear plaque, 53:74–75
Pushblocks, routing, 58:46, 52
Pushsticks, 58:20
Puzzle, caterpillar, 53:72–73

Q–S

Quassia, 51:31; 56:12
Quilt stand, 52:72–73
Radial-arm saw:
alignment tool for, 57:26
fence system for, 52:18
vs. mitersaws, 58:78
ripping with, 56:18
Rain forest, 51:80; 53:96; 57:9
Ramin, 56:34
Redwood, 52:88; 58:27–31
Relief carving, 50:33–37
trade sign, 51:40–43
Resawing, 51:53
Resin finishes, 54:8
Rocker, porch, 52:58–63
Rockingham Community College, Wentworth, N.C., 53:65–66
Rolling pins, 55:52–53
Rotary tool, support for, 57:30
Roughouts, 52:32–35
Routers, 56:72–73; 57:27
biscuit joinery with, 57:52–53; 58:54–55
bits, 53:31; ball-bearing pilots, 57:76
dado, 52:21
flush-trimming, 53:28
kickback-preventing, 51:27
stile-and-rail, 58:53
box parts, trimmed, 51:16
burns on work, 57:76
dust protection for, 50:16
fences, 58:50
system, 58:44–47, 81
hold-down for, 51:21
as planer, 53:20
for round-overs on dowels, 57:14
tables, 52:8; 55:10
extension, 58:48–49
mounting screws for, 56:10
plate levelers, 55:55
precision positioning jig attached to, 52:10
techniques with, 58:50–55
Rubber tree, Para, 52:25; 56:8
Rule/pocketknife, 56:56
Sabersaws, cutting with, 50:19
Safety, 54:63; 57:12
during carving, 50:14
with chisel rack, 51:10
with drop cords, 58:8
equipment, gathering, 54:15
with finish removers, 53:55, 56; 58:62
scrollsaw, 57:14
Sanders:
belt, 56:70–71
belts for, 56:52; 58:12
cord, suspending, 51:23
drum:
sandpaper for, 56:23
organizer, 56:80–84
spindle, oscillating, 56:55
Sanding discs, 57:29
Sanding sticks, 53:22; 58:22
Sandpaper:
buttons sanded with, 57:16
for drum sanders, 56:23
file folder for, 57:23
Sawdust. *See also Dust collectors.*
Saw blades, circular, 55:20
catalog, Freud's, 57:9
holder for, 58:16
Schools, woodworking, 53:64–67, 90
Scrapers:
burnisher for, 56:50
sharpening and using, 56:60–61
Screwdriver attachment for drill, 57:26
Screwdriver holder, 54:78–79
Screwdriving drill bits, 56:54
Screw holes, making, 55:12, 15
Screws:
masonry, 57:20
Scrollsaws, 56:74–75; 57:28
blade organizer, 56:90
blade-tensioner knob, gripper for, 50:14

Cumulative index for issues 50 to 58

dust blower, 53:24
magnifier lamp for, 55:57
noise reduction, 55:8
photo frame, 52:70–71
silhouettes, 50:10–11, 78–79
stack-cutting with, 56:20
SUPER SCROLLSAW PATTERNS™ 55:1
welcome sign, 58:66–67
windmill plaque, 55:66–67
Shaker furniture, 57:12
tall chest, 55:36–43
Shalako pendant, 53:53
Shapers, raised-panel-door set for, 56:57
Sharpening:
carving tools, 52:39–41
scrapers, 56:60
stones for, cleaning, 55:12
turning tools, 52:36–38
Sheet goods:
cutting, 50:14
dolly for, 54:17
plywood:
edging, 57:82
Shelves:
bookcase, 50:38–43
steadying with glue, 52:10
Shop skills:
jointer knives, 52:56–57
legs, leveling, 53:68
router burns, avoiding, 57:76
scrapers, sharpening and using, 56:60–61
Shop-tested techniques:
bandsawed through-dovetail joints, 51:44–48
biscuit joinery, 57:48–53
dovetails, 55:30–35
router, use of, 58:50–55
tin punching, 53:42–46
Shop vacuums:
vs. dust collectors, 54:42
hose hookups for, 50:18
Showcase, pedestal, 52:47–51
Sliding-compound miterssaws, 50:48–55; 56:51; 58:78
Snowshoes, 51:6
Solvent dispenser, 55:56
Spindle sander, osc., 56:55
Spline joints for edging, 57:82
Sprayer, HVLP, 51:26
Squares:
combination, 55:56
holder for, 54:78–79
Stains:
antique finish, 53:52
bleeding, preventing, 50:8
water-based, gelled, 56:52
Stencil brush, substitute, 50:20
Stool, shop, 54:70–73
Storage:
air hose, 55:54
chisels, 51:10; 55:76
drawer div., 51:16; 55:57
finishes, water-based, 53:12
magnetic, 55:56
planes, 50:9
sanding supplies, 56:80–84
sandpaper, 57:23
saw blades, 56:90; 58:16
saws, 57:18
totable, 54:12
wall-cabinet system, workshop, 54:32, 74–79; 58:10
wrenches, 51:12; 56:10
Strippers, finish, 53:54–59
using, 58:62–63, 76

T–V

Tablesaws, 54:88–89; 56:76–77
alignment tool for, 57:26
blade adjustment, 50:16
cove-cutting with, 52:8
extension for:
router table, 58:48–49
sliding, 53:18
miter-cutting moldings on, 50:30
outfeed rollers for, 55:18
safety with, 57:12
upgrade for, 50:8; 54:7
Tagua turning, 54:54–57
Tall chest, Shaker, 55:36–43 57:23
Tapers, turning, 56:18
Teddy bear wall plaque, 53:74–75
TV retrofits, 50:82–83; 51:10
Thickness planers, 51:54–55; 56:78–79, 94
Threaded inserts, installing, 52:7; 55:16
Through-dovetail joints, bandsawed, 51:44–53
Tin punching, 53:42–46; 57:8
pie safe, 53:47–52
teddy bear plaque, 53:74–75
Tissue-box cover, 54:50–51
Toggle bolts, 51:28
Tool companies:
Black & Decker, 55:88; 57:96
DeWalt brand, 54:22
Freud catalog, 57:9
Grizzly instruction manuals, 51:83
IDEA SHOP:
innovations: 55:54–57
list, 54:82–85, 87
Sears Craftsman Club, 53:9
Skil benchtop tools, 53:9
Tools. See also *Chisels, Collectible, Power,* and *Screwdrivers.*
Toxic woods, 56:92–93
Toys:
Build-A-Toy contest, 55:8, 68–70, 72–73; 57:60
caterpillar puzzle, 53:72–73
by H. Gorczynski, 53:37–41
liability insurance for, 57:82
periscope, 57:68–69
train, 57:60–65
wagons, 53:76–80; 56:10
Radio Flyer, 56:104
wrecker, 50:68–71
Train, toy, 57:60–65
Transitional planes, 56:96
Trees. *See also Wood species.*
logging operations, 50:62–67; 53:14, 96
medicinal uses of, 57:74–75
rain forest, 51:80; 53:96; 57:9
trivia about, 50:96; 53:96; 54:100; 56:104; 58:88
Trout, carved, 58:34–37
Truck, toy, 50:68–71
Turkey centerpiece, 56:42–43
Turners:
Hurt, R., 52:36–38
Klein, B., 54:7
Luebbers, C., 54:55–57
Turning:
bowls, 57:77–80
green wood, 50:72–75
potpourri, 52:42
butternut, 55:24
Christmas orn., 57:70–71
clock, shelf, 58:70–72
color-coded, 50:21; 57:18
green wood, 50:72–75
handles, tool, 56:88
hickory, 51:34
lathes, 56:28
chuck for, 55:54–55
small, 51:8; 56:53
music box, 53:69–71
oil lamps, 51:64–65
pincushions, 52:74
pine, eastern white, 53:36
rolling pins, 55:52–53
sanding stick for, 53:22
tagua, 54:54–57
tapers, 56:18
tools: 50:21; 53:29; 54:55
sharpening, 52:36–38
wheels, toy, grooves on, 58:14
willow, 58:26
TV retrofits, 50:82–83; 51:10
Vacuums, shop, 50:18; 52:15; 54:42
Valentine cutout, 50:78–79
Varnish:
linseed-turpentine-varnish (LTV) finish, 54:48–49
satin finish, 51:18
Vegetable ivory, 54:54–57
Violins, 57:33–37
Vise, end, 51:20
V-tools, sharpening, 52:41

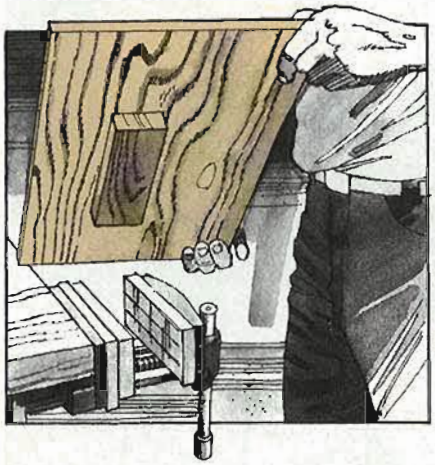
W–Z

Wagons, toy, 53:76–80; 56:10
Radio Flyer, 56:104
Wall-cabinet system, workshop, 54:32, 74–79; 58:10
Water-based finishes, 50:91
enamel paints, 56:57
gelled stain, 56:52
Water systems, wooden, 57:86
Weather station, 50:44–47
Welcome sign, 58:66–67
Whale decoration, 50:80–81
Wheels:
tools on, 58:12
toy:
bushings for, 53:18
turning grooves on, 58:14
Whittling, 54:40–41
Willow, black, 58:25–26
Windmill plaque, scrollsawed, 55:66–67
Woodies (cars), 52:64–67
Wood species, 56:11
butternut, 55:23–24
ceiba, 57:84
cherry, finishing, 55:78
chestnut, 52:88
darah darah, 53:33
endangered, 51:80; 57:9
gum arabic, 54:92
hickory, 51:33–34
maple, 55:78
pine, east. white, 53:35–36
quassia, 51:31; 56:12
ramin, 56:34
redwood, use of, 52:88; 58:27–31
rubber tree, 52:25; 56:8
toxic, 56:92–93
willow, black, 58:25–26
Workbenches, 54:64–69
end vise for, 51:20
protecting, from thieves, 56:62–63
protecting top of, 50:20
securing work on, 56:16
stop for, 57:20
Woven wood:
baskets, split-ash, 54:35–39
hamper, 58:38–43
Wrecker, toy, 50:68–71
Wrench rack, 51:12; 56:10
Yarn carrier, 51:52–53
Yestermorrow school, Warren, Vt., 53:66–67

Print this article

HOW TO CLAMP TRICKY MITERED MOLDINGS

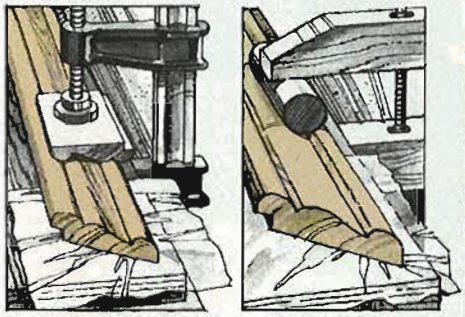
At one time or another, you'll probably face a mitered joint that seems to defy assembly. As an example for this article, we came up with a doozy: an intricately shaped picture molding with precious few flat surfaces for clamping. Here's how we make quick and simple work of this challenging situation.



1 First, you need to build an auxiliary work surface like the one shown *above*. We assembled ours from a 16×24" piece of ¾" plywood and a cleat of scrapwood screwed to its underside. With the cleat secured in your vise, this work surface gives you greater working freedom to take on the following steps.

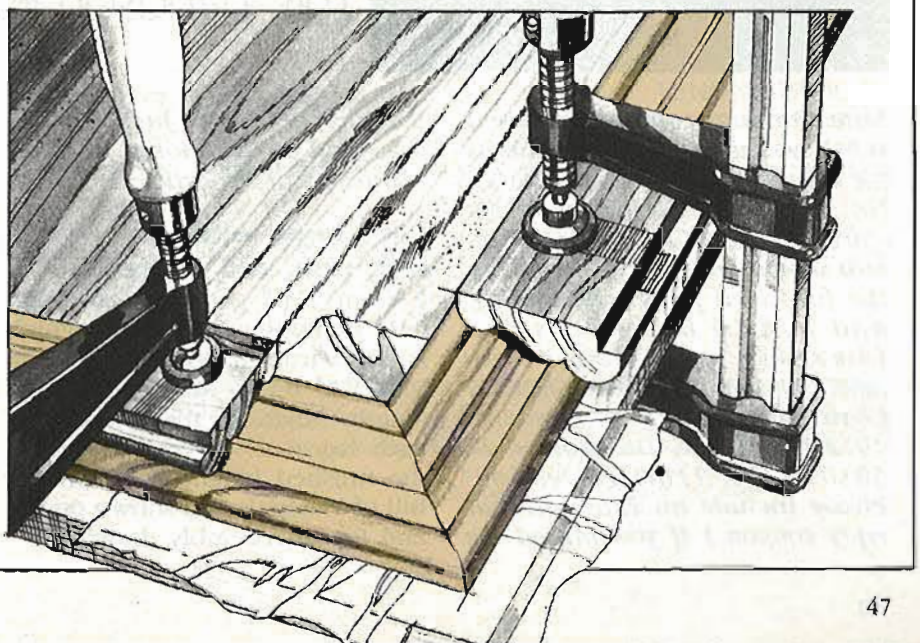
***Note:** Before you get to the following steps, dry-assemble your mitered workpieces to ensure that they form a square frame without gaps at the joints.*

2 Now, position and clamp a scrap piece of your molding *face side down* and *rabbet side out* as shown *top left*. This clamping block protects your molding and provides a flat area for your clamp's pad to rest on. This usually does the trick, but if the scrap of molding slides off the workpiece, then you need to try a different clamping block.



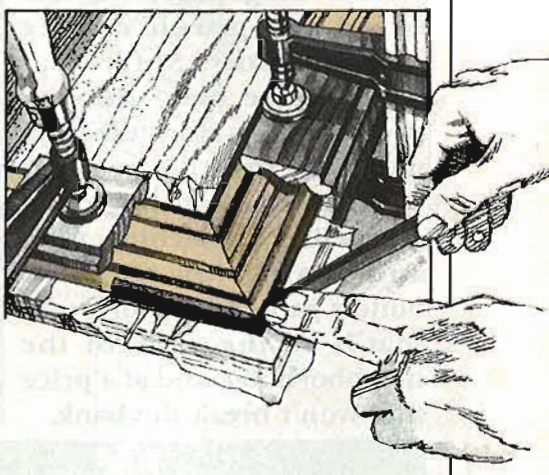
As shown *above right*, a short length of dowel rod provides a good surface for a handscrew clamp. If you don't own handscrew clamps, sand a flat spot onto the dowel for receiving barclamp pads. Note that in both instances you need to place some waxed paper beneath the mitered end of the molding. This prevents oozing glue from adhering your workpieces to the plywood.

3 Apply glue to both mitered ends of the joint. Then, position the other mitered workpiece, and repeat the clamping procedure. Adjust the clamps for light pressure—enough to hold the workpieces flat, but not so much that you can't slide them back and forth slightly.



4 With a narrow piece of duct-, strapping-, or some other fiber-reinforced tape, bring the mitered joint tightly together. (Masking tape does not have sufficient strength.) You should see a small amount of squeeze-out along the joint line.

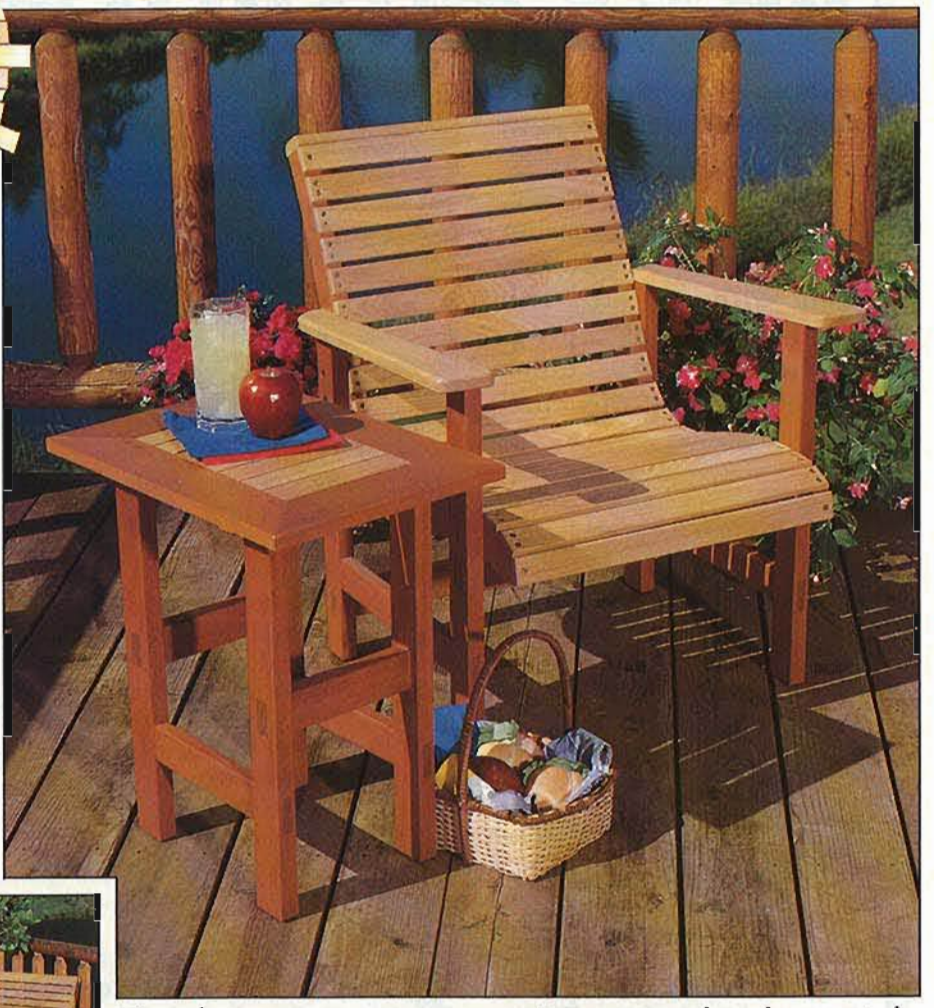
If possible, reinforce the joint with nails after the glue dries. Be sure to drill pilot holes to avoid splitting the wood.



Illustrations: Jim Stevenson

Print this article

FUN -IN-THE- SUN FURNITURE



In the June 1992 issue of *WOOD* magazine, we featured the porch rocker shown below. Since that time, we've been flooded with requests for full-sized patterns for the project. We've also been hearing that you'd like a matching table and chair. Now you can build a patio-full of furniture that'll be the envy of the neighborhood, and at a price that won't break the bank.

Perk up your patio or deck with this handsome table and chair

***Note:** For your convenience, we'll supply you with full-sized patterns for the slat supports (parts F, G). Or, if you just can't wait to get started, enlarge the gridded pattern shown on* page 51. *To receive the full-sized patterns, send $3 and a #10 business-sized (4⅛×9½") self-addressed envelope with 58¢ postage to Outdoor Chair Patterns, WOOD Magazine, 1912 Grand Ave, Des Moines, IA 50309-3379. (Foreign readers: Please include an international reply coupon.) If you missed the porch rocker in the June 1992 issue, send an additional $2 for a photocopy of the article.*

Let's begin with the legs, rails, and armrests

1 From 1⅛" genuine mahogany (not Philippine mahogany, which is not a true mahogany), cut the legs (A, B) to size plus 1" in length. Miter-cut the top end of each leg at 4° to cut the legs to the finished length stated in the Bill of Materials and shown on the End Frame Assembly drawing.

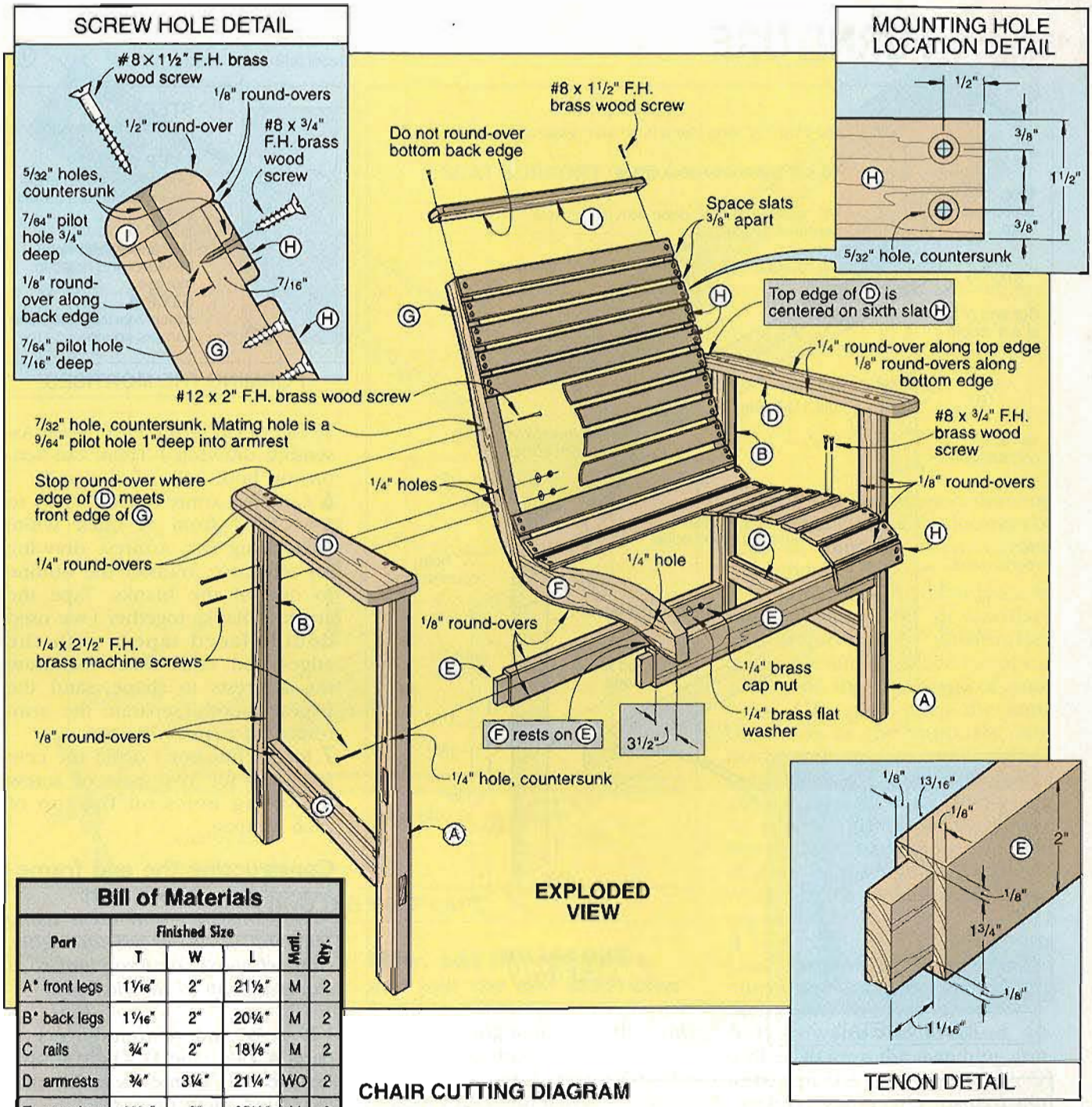
2 From ¾" genuine mahogany, cut the rails (C) to size.

3 Using the dimensions on the End Frame Assembly drawing, carefully mark the mortise and ¼" hole centerpoints on each leg (A, B). Following the four-step procedure on the Forming the Mortises drawing, drill and chisel the mortises through the legs.

4 Drill and countersink a ¼" hole in each front leg (A) and two in each back leg (B).

5 Mark the tenon locations on the ends of each rail (C). (See the

Text continues on page 50



Bill of Materials

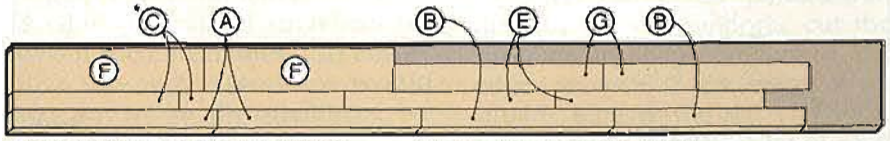
Part	Finished Size T	W	L	Matl.	Qty.
A* front legs	1 1/16"	2"	21½"	M	2
B* back legs	1 1/16"	2"	20¼"	M	2
C rails	¾"	2"	18⅛"	M	2
D armrests	¾"	3¼"	21¼"	WO	2
E stretchers	1 1/16"	2"	23⅛"	M	2
F* btm. slat supports	1 1/16"	4¾"	21"	M	2
G* back slat supports	1 1/16"	3"	23"	M	2
H slats	5/16"	1½"	21"	WO	20
I top slat	¾"	2"	21"	WO	1

*Dimensions given are initial thickness, length, and width.

Material Key: M–genuine mahogany, WO–white oak

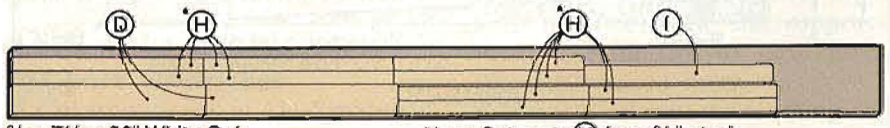
Supplies: ¼ x 2½" flathead brass machine screws with ¼" brass flat washers and ¼" brass cap nuts, #8 x ¾" flathead brass wood screws, #8 x 1½" flathead brass wood screws, #12 x 2" flathead brass wood screws, #8 x 2" galvanized deck screws, clear exterior finish.

CHAIR CUTTING DIAGRAM



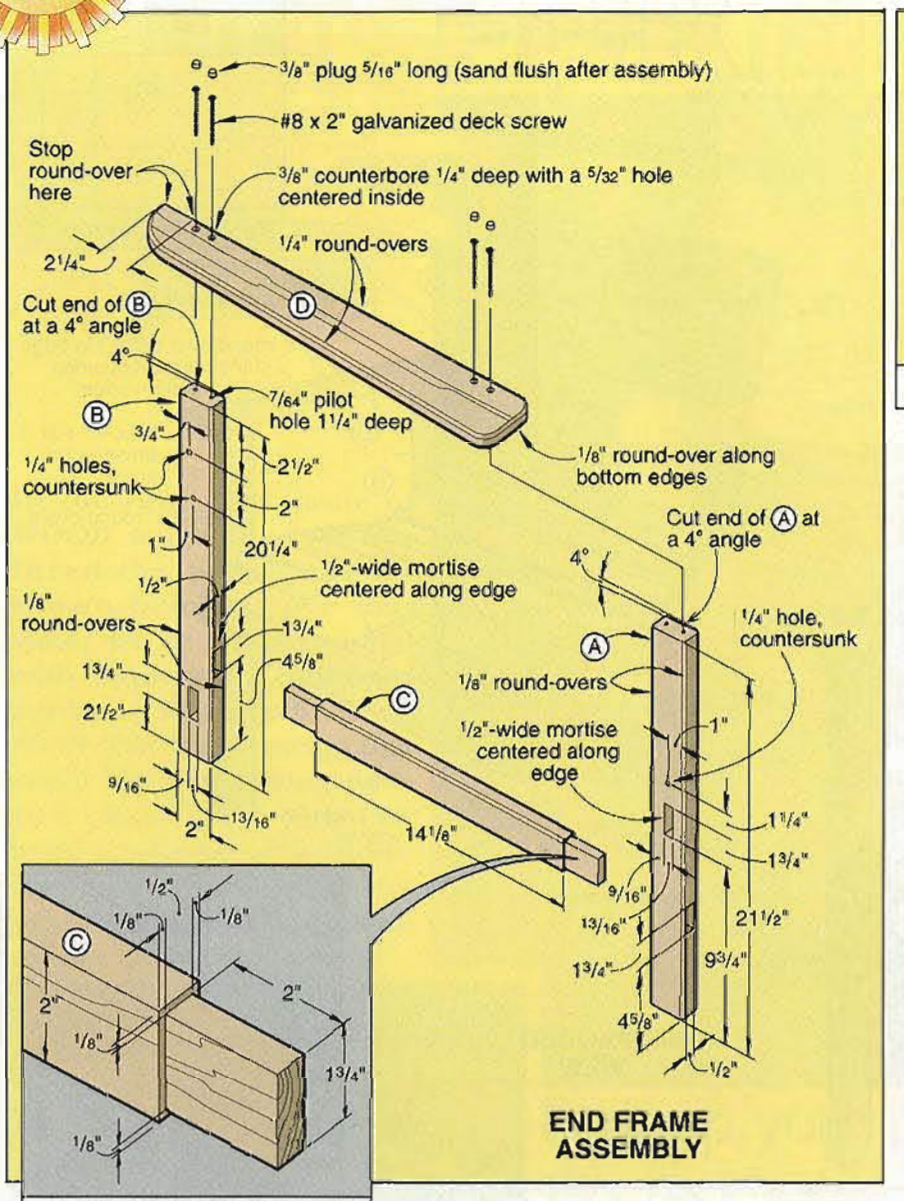
1 1/16 x 9¼ x 96" Genuine Mahogany

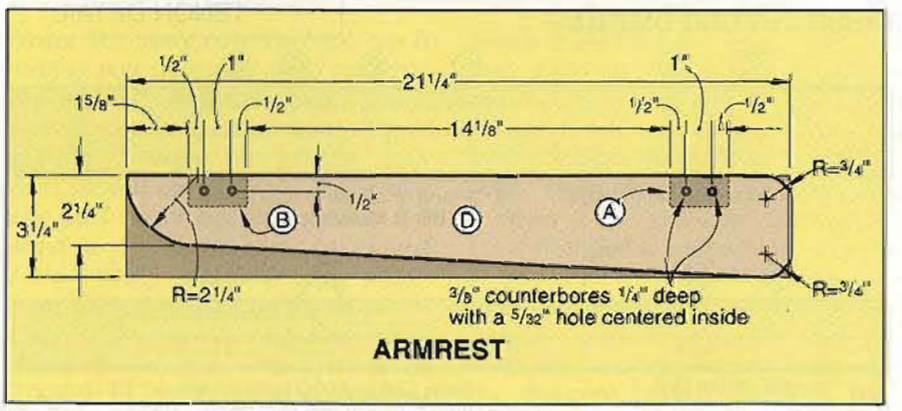
*Plane or resaw to size listed in Bill of Materials

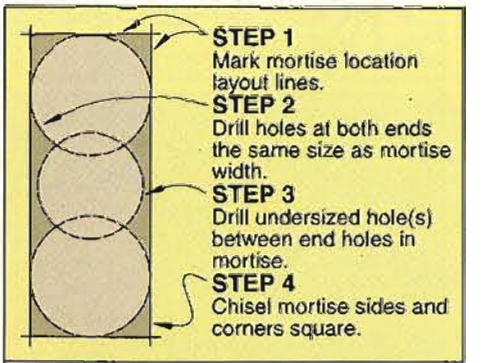


¾ x 7¼ x 96" White Oak

Note: Cut parts H from ¾" stock, then resaw in half to form 5/16" slats






STEP 1
Mark mortise location layout lines.
STEP 2
Drill holes at both ends the same size as mortise width.
STEP 3
Drill undersized hole(s) between end holes in mortise.
STEP 4
Chisel mortise sides and corners square.
FORMING THE MORTISES

Tenon detail in the End Frame Assembly drawing.) Then, cut tenons on both ends of each rail.

6 Cut two armrest blanks (D) to 3¼ × 21¼" from ¾"-thick white oak. Using the Armrest drawing for reference, transfer the outline to one of the blanks. Tape the armrest blanks together (we used double-faced tape), with the edges and ends flush. Bandsaw the armrests to shape, sand the edges smooth, separate the armrests, and remove the tape.

7 Mark (but don't drill) the centerpoints for two pair of screw mounting holes on the top of each armrest.

Constructing the end frame assemblies comes next

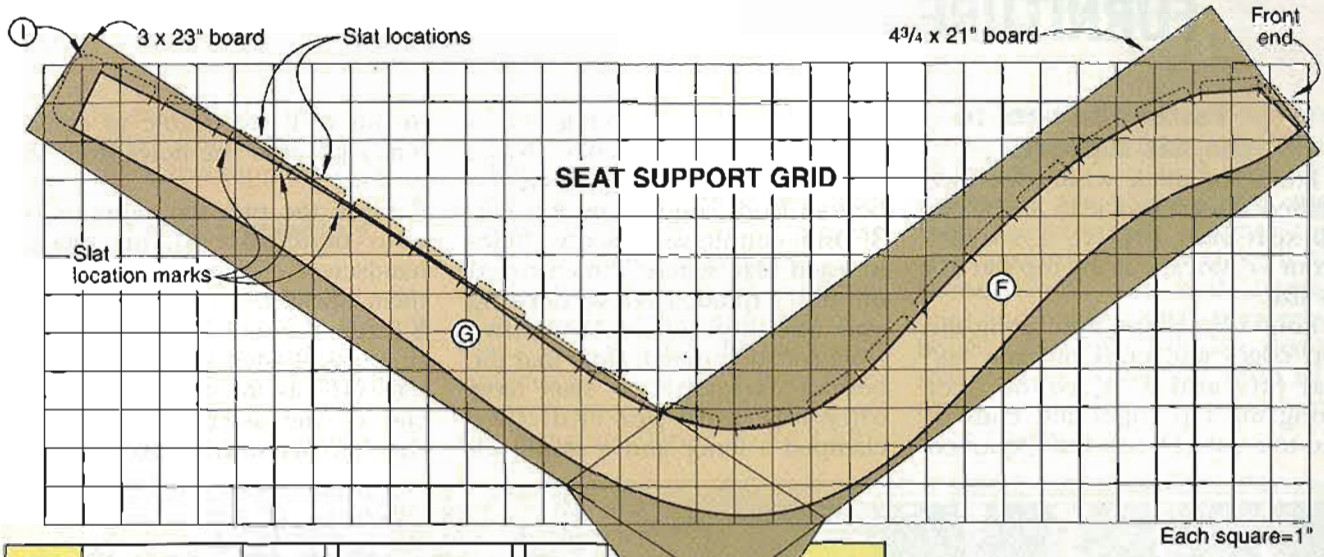
Note: Construct your chair using Titebond II water-resistant glue, slow-set epoxy, or resorcinol so it can stand up to the elements.

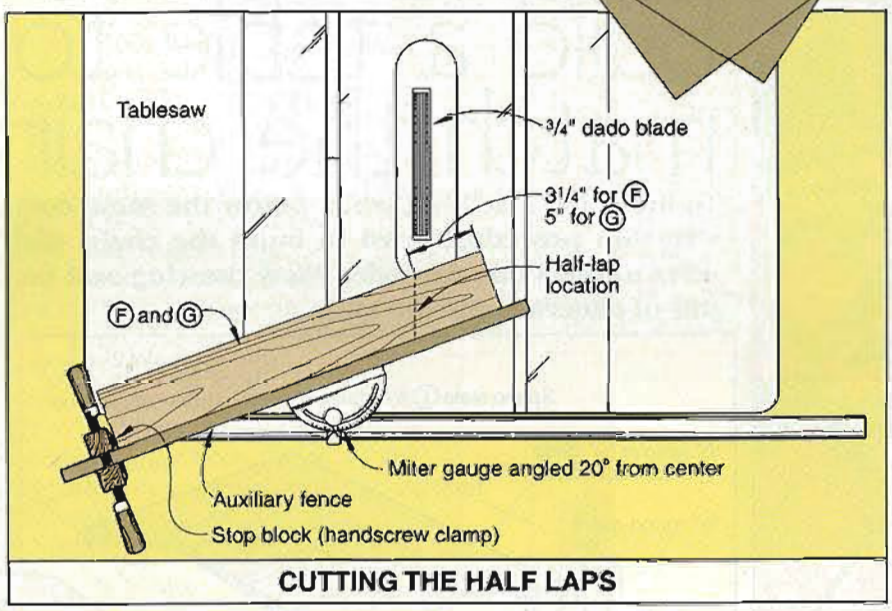
1 Rout ⅛" and ¼" round-overs on parts A, B, C, and D where shown on the End Frame Assembly and Exploded View drawings.

2 Glue and clamp a rail (C) between a front and back leg. Using a framing square, check that the legs are square to the rail.

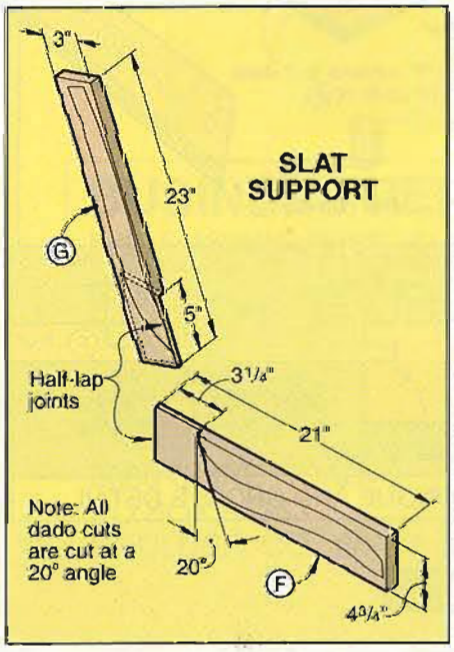
3 Clamp an armrest on the top of each end frame assembly (A, B, C). Verify that the marked mounting holes are located on the top of the legs. Re-mark if necessary.

4 Drill the mounting holes through the armrests and into the top ends of the legs. Screw the armrests to the leg tops, plug the holes, and sand the plugs flush.





CUTTING THE HALF LAPS



Now, add the stretchers, and join the end assemblies

1 Cut the stretchers (E) to size. Cut 1⅛"-long tenons on the ends of each stretcher.

2 Rout ⅛" round-overs along the edges of each stretcher.

3 Glue the pair of stretchers between the end frames. (To ensure that the end assemblies would stay square to the stretchers, we clamped square corner braces in place and left them there until the glue dried.) Sand the chair frame.

Let's make the slat-support assemblies

1 Cut two pieces of 1⅛" mahogany to 4¾×21" for the bottom-slat supports (F) and two pieces to 3×23" for back-slat supports (G).

2 Using the Slat Support drawing for reference, mark the location of a half-lap joint on one end of each slat support (F, G).

3 Mount a ¾"-wide dado blade to your tablesaw and an auxiliary wooden fence to your miter gauge. Elevate the blade to cut exactly half the thickness of your stock. (We used scrap the same thickness as the supports, and made test cuts to verify blade height.) Angle the miter gauge 20° from center, and clamp a stop to your auxiliary miter-gauge fence. Cut a half-lap on one end of each of the four slat supports where dimensioned on the drawing at *left*.

4 Dry-clamp the two supports (one F and one G per support) to check the fit. Glue and clamp each of the two slat supports.

5 Following the method described to form the matching armrests, tape the slat supports (F, G) together, transfer the pattern outlines to the slat supports, cut the supports to shape, and sand the edges smooth. Then, using a try square, transfer the slat (H) locations to the top front edge of each slat support. Pry the pieces apart, remove the double-faced tape, and finish-sand the slat supports, being careful not to sand away the slat location lines.

6 Rout ⅛" round-overs along the bottom and back edges of each slat support where shown on the Exploded View drawing.

Continued

Fasten the slats to the slat supports

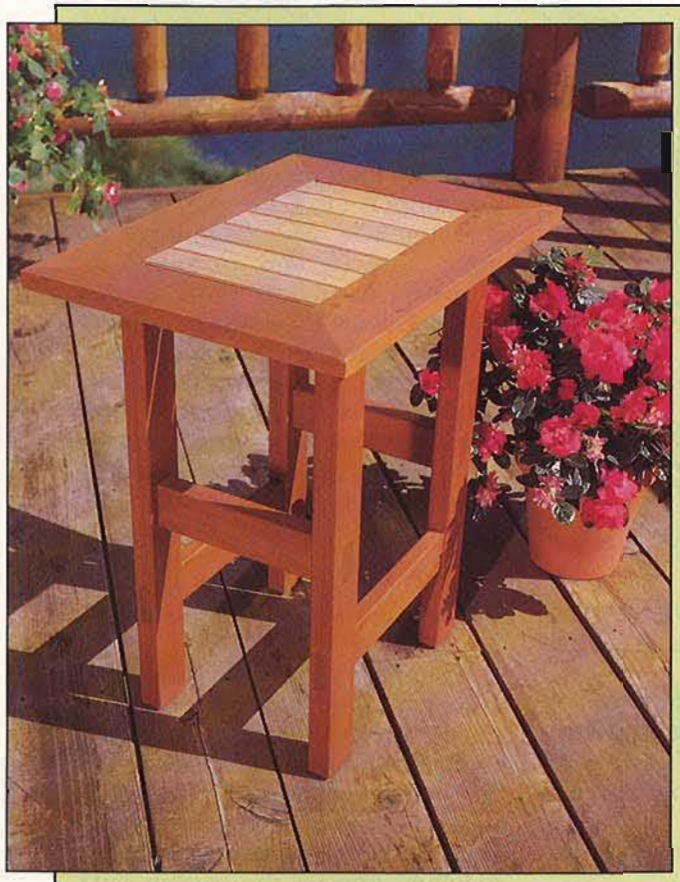
1 From 5/16"-thick white oak (we planed thicker stock to size), cut 20 seat slats (H) to 1½ × 21". From ¾" stock, cut the top slat (I) to size.

2 Rout a ⅛" round-over along the top edges and ends of each 5/16" slat (H) and a ½" round-over along the top edges and ends of the top slat (I). See the Exploded View and accompanying Screw Hole detail for reference. Next, rout a ⅛" round-over along the bottom front edge of the top slat.

3 Drill countersunk screw holes in each slat where dimensioned on the Exploded View drawing and accompanying Mounting Hole Location detail. Note that the bottom and top two slats have only one hole per end. (We clamped a fence and a stopblock to our drill-press table to consistently position the holes from slat to slat.)

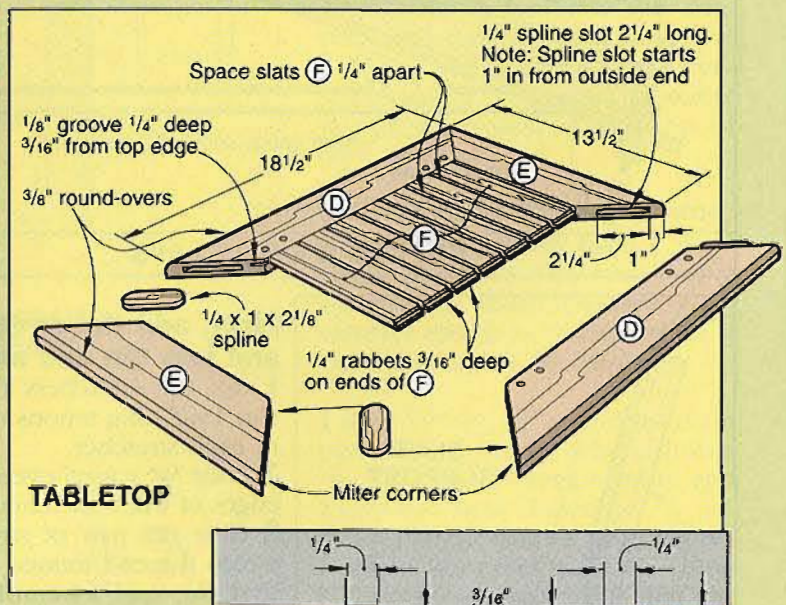
4 Place the two slat supports on your benchtop. Clamp a large handscrew clamp to each to hold them upright.

5 Screw the top slat (I) to the slat supports. Fasten one of the 5/16" slats (H) to the opposite bottom end of the assembly. Following the layout marks on the slat



Build a table to match the chair

To build the matching table, follow the same construction procedure used to build the chair, and refer to the Table Exploded View drawing and the Bill of Materials for the table.


1/4" spline slot 2 1/4" long. Note: Spline slot starts 1" in from outside end
Space slats (F) 1/4" apart
1/8" groove 1/4" deep 3/16" from top edge
18 1/2"
13 1/2"
3/8" round-overs
2 1/4"
1"
1/4 x 1 x 2 1/8" spline
1/4" rabbets 3/16" deep on ends of (F)
Miter corners
TABLETOP

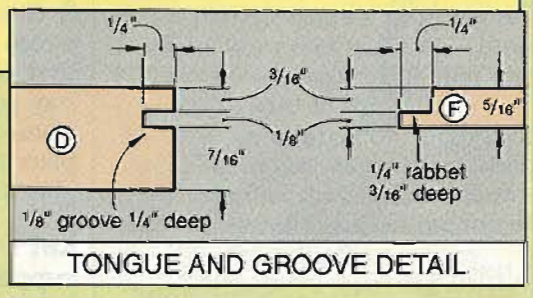
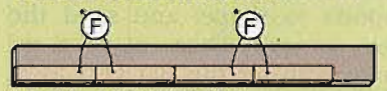
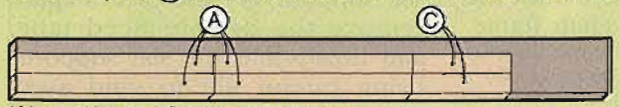


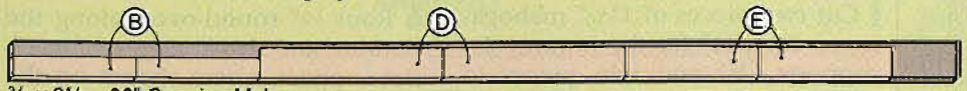
TABLE CUTTING DIAGRAM



¾ x 3½ x 36" White Oak
Note: Cut parts (F) from ¾" stock, then resaw in half to form 5/16" slats



1 1/16 x 5½ x 60" Genuine Mahogany



¾ x 3½ x 96" Genuine Mahogany

supports, fasten the remaining seat slats (H). Check that the slats are square to the supports.

Attach the seat assembly to the chair frame

1 With a helper, position the seat assembly on the chair frame where dimensioned in the tinted boxes on the Exploded View drawing. Once positioned, firmly clamp the seat to the frame.

2 Using the previously drilled ¼" holes in the front and rear legs as guides, drill ¼" holes through the supports. Using ¼" brass machine screws, flat washers, and cap nuts, connect the two assemblies.

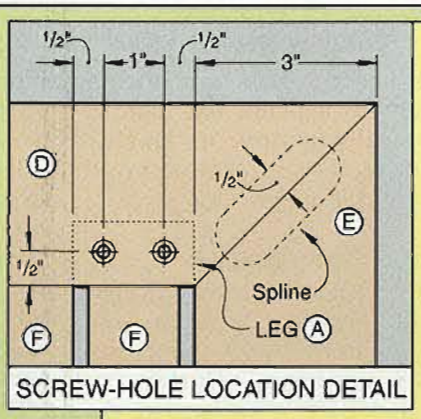
3 Working from the back of the chair, drill a 7⁄32" countersunk shank hole through the back seat supports (G) and a 9⁄64" pilot hole 1" deep into the inside edge of the armrests. Drive a #12×2" flathead brass wood screw through each support and into the armrests.

4 Remove the wood screws and machine screws to separate the seat assembly from the chair frame. Finish-sand both assemblies and apply a quality exterior finish. (We applied three coats of spar varnish.) After the finish has dried, fasten the two assemblies back together.

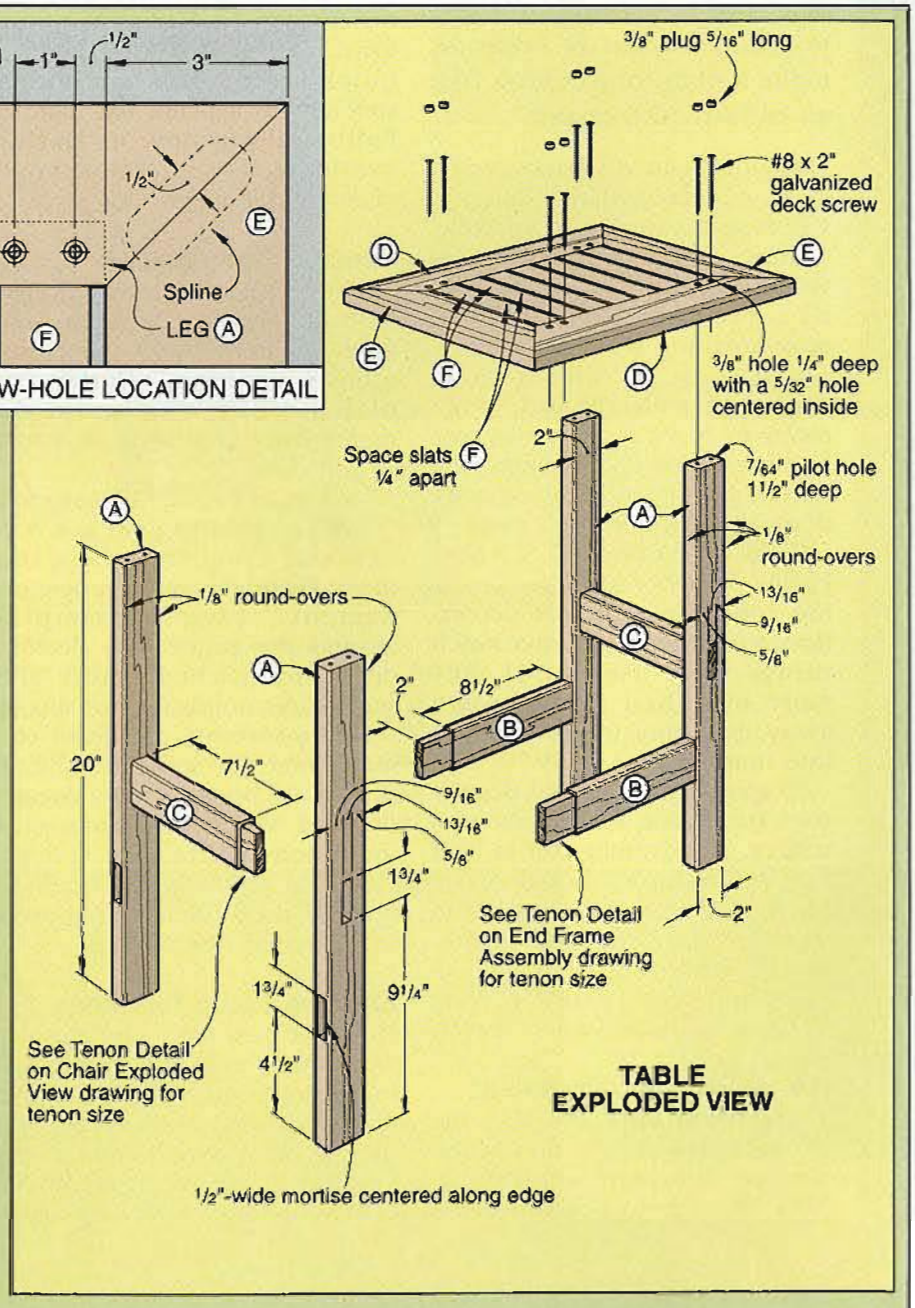
Using your router and a slot-cutting bit, rout ¼" spline slots 2¼" long in the mitered ends of the tabletop banding pieces (D, E). See the drawing at *left* for reference. Next, turn the banding pieces on edge, and cut a ⅛" groove along the inside edge of each (to accommodate the slats [F]) on your tablesaw. Then, use your tablesaw fitted with a dado blade and a miter-gauge fence to cut ¼" rabbets across the ends of the slats (F). Check the fit of the slat ends into the grooves cut in the banding pieces.

Assemble the table base, and then the tabletop. Finally, screw the two assemblies together and add the finish.

Produced by Marlen Kemmet. Project Designs: James R. Downing. Photographs: John Hetherington. Illustrations: Kim Downing



SCREW-HOLE LOCATION DETAIL



Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
A legs	1 1⁄16"	2"	20"	M	4
B stretchers	¾"	2"	12½"	M	2
C rails	1 1⁄16"	2"	9⅝"	M	2
D banding	¾"	3"	18½"	M	2
E banding	¾"	3"	13½"	M	2
F slats	5⁄16"	1½"	8"	WO	7

Material Key: M–genuine mahogany, WO–white oak

Supplies: #8×2" galvanized deck screws, clear exterior finish.

BARKROSING

A nifty Nordic decorative technique you'll want to try

You won't find an easier way than barkrosing to dress up anything wooden. With a knife, some sandpaper, and a chunk of bark, you have what it takes to make a plain object look like an old-world treasure.

"Anybody can do barkrosing," says woodcarver Harley Refsal as we sit at his dining room table, etching patterns into pieces of wood. He's right; it's easy. And it's a great embellishment for almost anything wooden.

Barkrosing, coloring a knife-cut design with tree bark, originated in Norway centuries ago. Historians don't know precisely when, however. That's partly due to its humble beginnings.

"This wasn't fine art," explains Harley, *WOOD®* magazine's carving consultant. "It was decoration for everyday items. Such things were used until they wore out, then were thrown away. So, they never made it into museums for study."

Despite being a carved decoration, barkrosing leaves a smooth surface, an advantage for at least two common early-day uses. Kitchenware, such as bowls and spoons, wiped clean easily. And on skis, barkrosing didn't collect snow and ice as raised carving or open engraving would have.

An adaptable adornment

Today, barkrosing still fills the bill for quick, easy-to-do decoration on utilitarian wooden objects. "It's a great way to make a nice, quick, handmade gift," Harley points out. "Just buy a plain wooden spoon and dress it up with a little barkrosing."

To try out that idea, we head downtown in Harley's hometown, Decorah, Iowa. There, a quick search nets a wooden spoon with a plain, flat handle. Follow along now as Harley transforms it from ordinary into distinctive in a few easy steps.

Pencil a few doodles

The first step is to draw a design onto the handle. "A simple geometric pattern looks good and follows tradition," Harley explains. "But, you could do monograms or designs as fancy as you dare."

"When in doubt," he suggests, "draw two parallel lines as a border, and crosshatch between them. Diamonds make a nice ornament." (See the samples around the pages.) He decides on a crosshatched border and stacked diamonds for our spoon.

Harley sketches the major elements onto the spoon handle, as shown in *photo A*. He doesn't draw in all of the details—just indications where they will go. "You can follow a fine line better with the knife blade, so use a sharp pencil," he advises.

Engrave those fine lines

Next, he inscribes the design. "Any sharp knife will suffice, but the closer to the tip you can grip it, the better," Harley says. He uses a 6mm Swiss knife blank (catalog no. 05S12, from Woodcraft Supply Co., 800/225-1153), but you may find an X-Acto knife more comfortable to use because of its thicker grip.

The technique is simple: just grip the knife as you would a pencil, and score along the guidelines, shown in *photo B*. A simple incision with the knife perpendicular to the surface works best.

Harley presses the knife tip into the wood just deeply enough to open a visible slit. "For bolder lines, cut a little deeper and wider," he says, "but keep each line uniform." Pay attention to the grain lest it steer your knife off in a direction you weren't planning to go. Erasing a mistake, when it's possible, calls for a lot of sanding.

Now, Harley grabs a chunk of walnut bark scavenged from his yard. He rubs the corky outside of the bark along a piece of 180-grit sandpaper, making fine, brown dust (*photo C*).

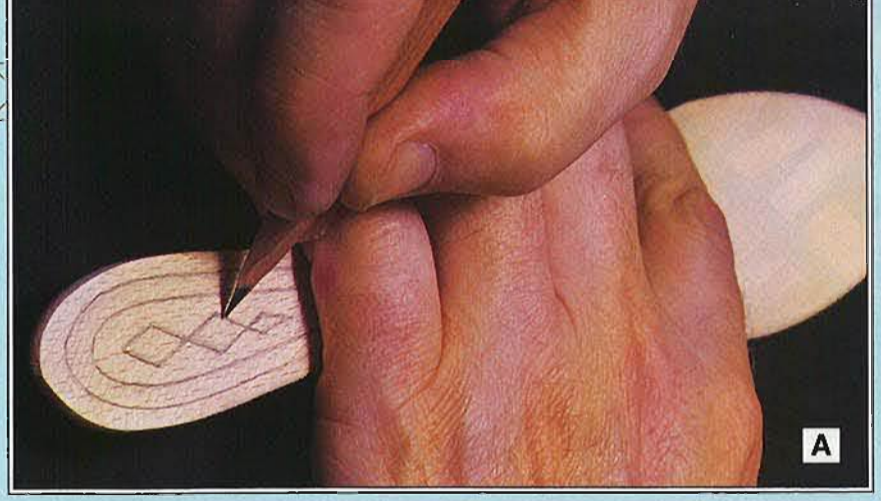
Go ahead, rub it in

Then, he picks up a pinch of the bark powder and rubs it into the incised design with his fingertips (*photo D*). He works bark dust into all parts of the design. Next, he lightly sands the carved and filled area with 400-grit sandpaper to remove the edges raised by the blade.

Finally, he applies a clear oil finish (*photo E*). For the spoon, which could be used for serving or preparing food, he uses Behlen's Salad Bowl Oil.

Written by Larry Johnston
Photographs: Chip Peterson
Illustrations: Kim Downing

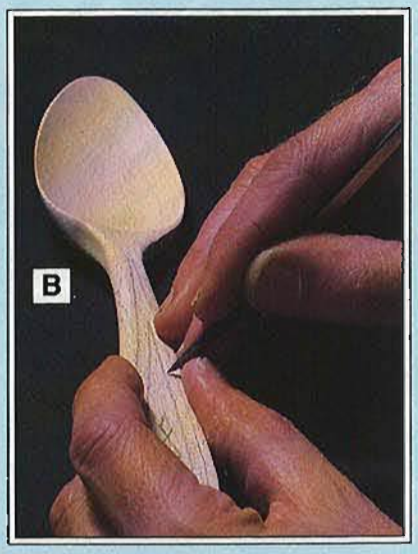
Print this article

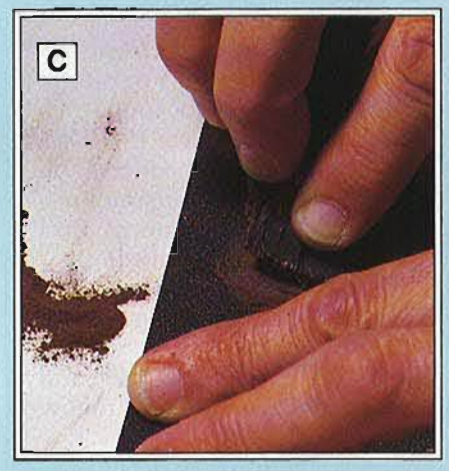


▲ Draw light guidelines. That way, they'll come off without excessive sanding. Too much sanding to remove the guidelines after you've cut your design into the wood will ruin your work. Try out your design first on paper.

▶ Hold the knife as close to the tip as possible for maximum control. Be sure to use a sharp knife for clean, crisp lines.

▼ A piece of 180-grit sandpaper produces fine bark dust in a hurry. We show walnut here, but other tree barks will work.



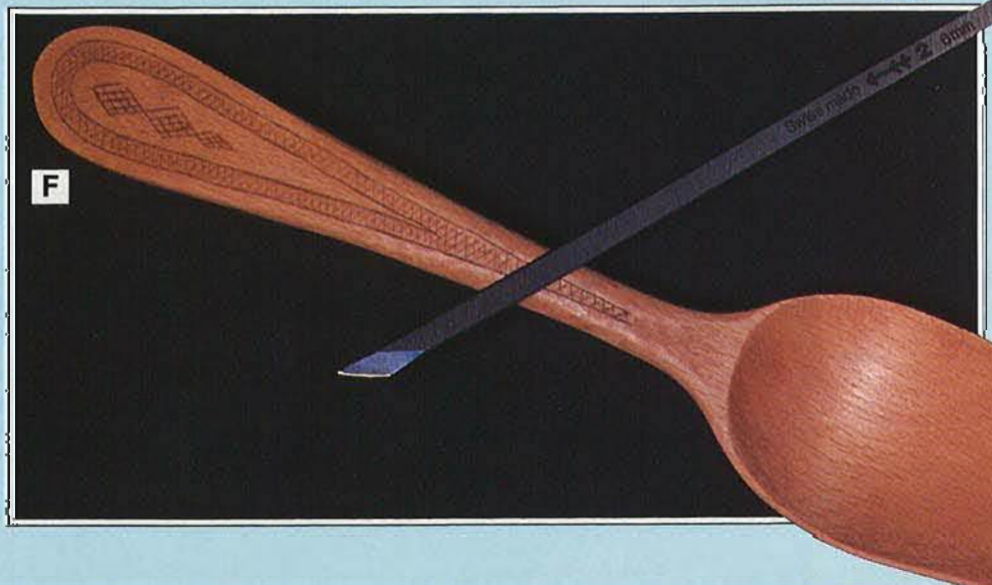


▲ Rub the bark powder into the lines with your fingertips. This really isn't as messy as it looks, but do it over paper, anyway.

◀ Salad-bowl oil brings out the color of the barkrosing, and soaks into the powdered bark to bind it to the base wood. You also could apply lacquer or polyurethane for a protective coating on decorative items.

▼ Harley Refsal used the 6mm Swiss knife blank shown to carve the design into the spoon handle. Any knife you can grip near the tip will work.

▼ You can combine elements from traditional designs such as the ones around these pages to make borders and ornaments. Any geometric designs, old or new, adapt well to the technique.



PATTERNS, PATTERNS, EVERYWHERE

SCROLLSAW PATTERNS FROM PRINTED PICTURES

Print this article

We have yet to meet a scrollsawer who couldn't use a few more patterns. So here are some methods you can use to turn almost any printed photograph or illustration into a scrollsaw project.

Note: With these techniques, you'll almost assuredly be using artwork or photographs that are copyrighted. To avoid legal woes, don't use such patterns to make items for sale.

A king's ransom in scrollsaw patterns awaits you at the newsstand. In magazines, children's storybooks, picture postcards, greeting cards, calendars, and coloring books, you'll find a marvelous array of photographs and illustrations. And they're all potential scrollsaw patterns!

Whether you like airplanes or zebras, you're sure to find something appealing. When you do, you can take any of several approaches to using it as a pattern. Here are three of our favorite methods for making patterns from pictures.

- **Tracing.** Line drawings, such as coloring-book illustrations, make great silhouette patterns. Enlarge or reduce the artwork on a photocopier if you wish. Then, simply trace the outline onto your stock with carbon paper or transfer paper. (You can trace photographs, too, as we did with the gymnast silhouette shown.) These cutouts lend themselves to painting or woodburning, too.
- **Direct mount.** Attach illustrations or photographs directly to your stock with spray adhesive. If the art is strictly a cutting pattern, follow the spray-can instructions for temporary mounting. Peel the pattern off after cutting.

If, on the other hand, you want the printed image to be part of your design, as we did with the car key hanger and jukebox CD rack, follow

A foam brush works great for applying transfer medium to the face of the printed image. The medium brushes on opaque, but dries clear. Allow the medium to dry thoroughly before proceeding.

the instructions for permanent mounting. Spray the completed cutout with lacquer or clear acrylic for protection.

When you're using an illustration from a magazine this way, mount a small piece of the page first and spray it with acrylic to make sure that the type from the back won't show through and spoil your picture. If it does, use the next method.

• **Transfer.** Lift an image right off a printed page—color or black-and-white—and stick it onto your stock with the simple process we used for our Kachina doll. It's like converting the published artwork into a decal.

First, lay the page faceup, and brush an even coat of acrylic transfer medium over the picture you want to save. (We used Picture This Transfer Medium, which we bought at a craft store.)

Allow an ample margin around the picture as you brush on the medium. (See photos *below.*) Let dry, and then apply another coat crosswise to the first. Flow the medium on smoothly to prevent brush marks. When dry, cut out the coated area and lay it facedown on a smooth surface. Wet the back with water, and rub the paper off, leaving a decal-like image on the acrylic film.

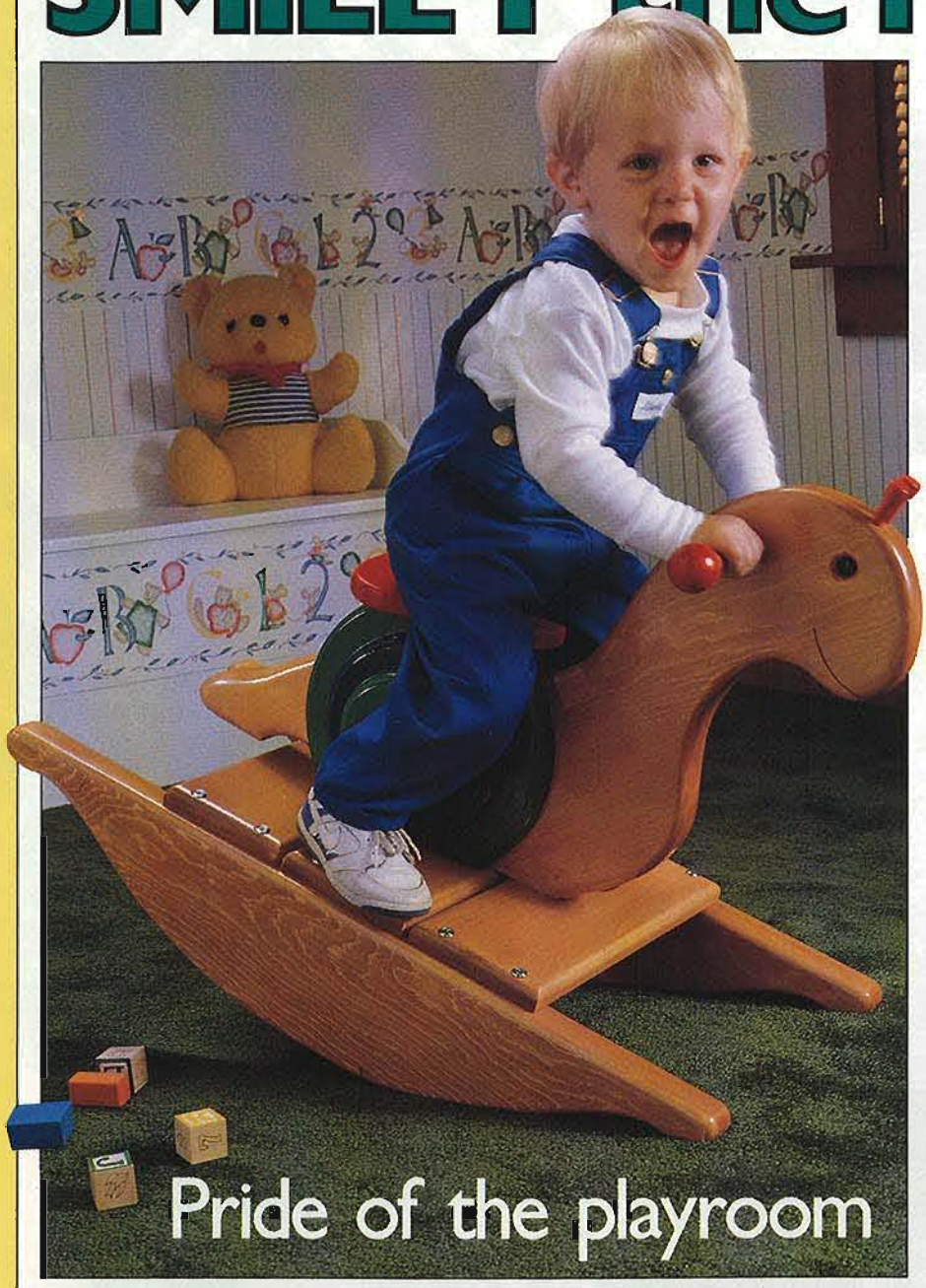
Brush a coat of thinned medium onto your stock. While it's still wet, smooth your acrylic decal onto the surface faceup, as shown *below.* Smooth out the air bubbles carefully. Let it dry before scrollsawing.

Photographs: John Hetherington; Wm. Hopkins Jr.

With the picture facedown, wet the uncoated back with water and rub gently with a sponge or clean foam brush to remove the paper. The image remains on the acrylic film.

Brush water-thinned medium onto the wood, and carefully lay the picture faceup on the wet surface. Work out bubbles and wrinkles, taking care not to stretch the pattern out of shape. Light-colored wood preserves more detail.

SMILEY the rocking



Pride of the playroom

We're not sure if our happy-go-lucky snail rocker is a boy or a girl, but we are certain of one thing. Your special little one will fall in love with this perky playroom pal the first time he or she takes it for a test ride. In addition to its winning looks, this project features sturdy construction held together by glue, dowels, and screws.

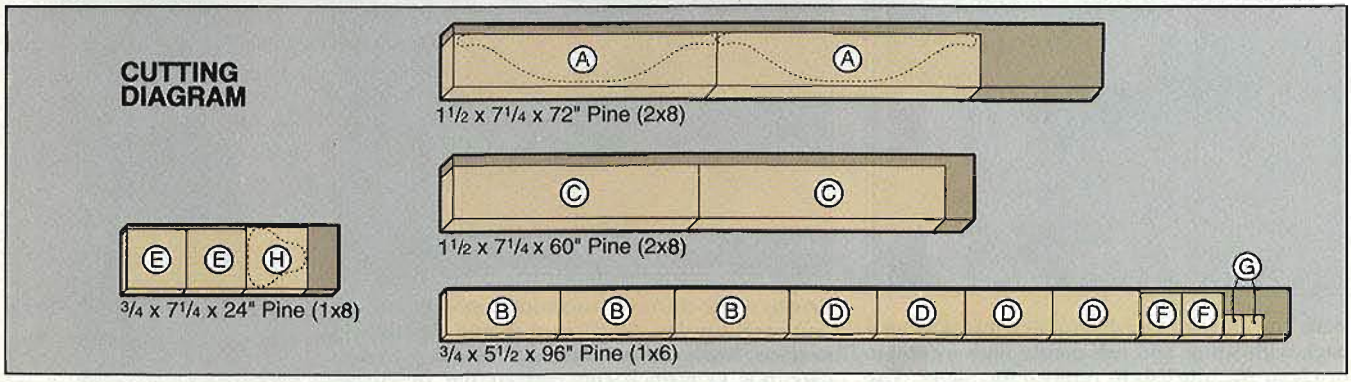
Note: *To lay out the rocker and body patterns, you can enlarge the gridded patterns on* page 60 *or order full-sized patterns from us. To order, send $3 and a #10 (4⅛×9½"), self-addressed envelope with 58¢ postage to WOOD Magazine's Smiley the Rocking Snail, 1912 Grand Avenue, Des Moines, IA 50309-3379. (Foreign readers: Please include an international reply coupon.)*

Start with the rockers to get things moving

1 Cut two pieces of clear pine, spruce, or fir to 6" wide by 31" long for the rocker blanks (A). Plane or joint the *top* edge of each piece.

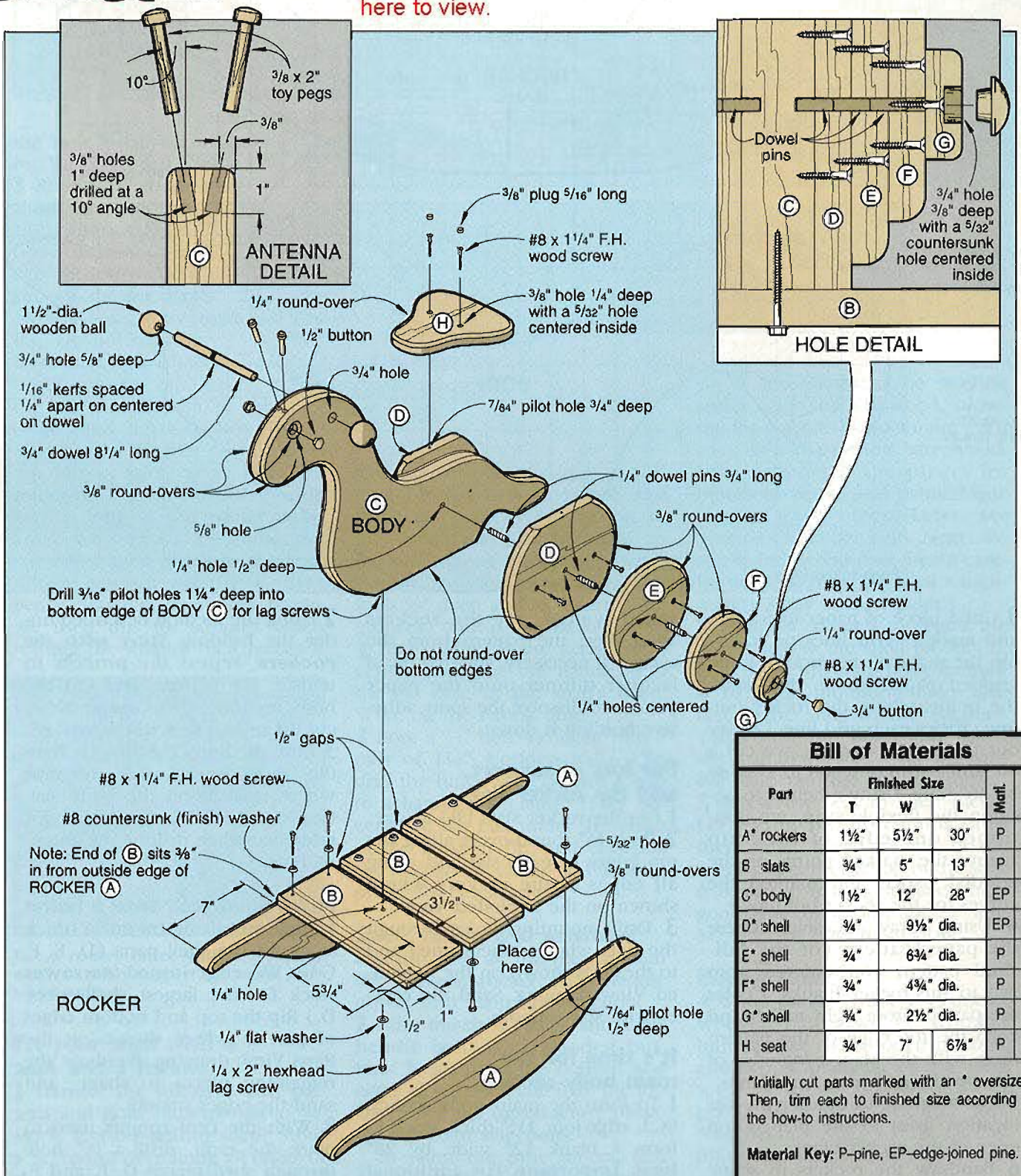
2 Using double-faced (carpet) tape, adhere the two rocker blanks together face-to-face, with the edges and ends flush.

Text continues on page 60



snail

Important safety update: See the Oct. 1993 issue (no. 64), pg. 7 for an important safety update. Click here to view.



EXPLODED VIEW

Bill of Materials

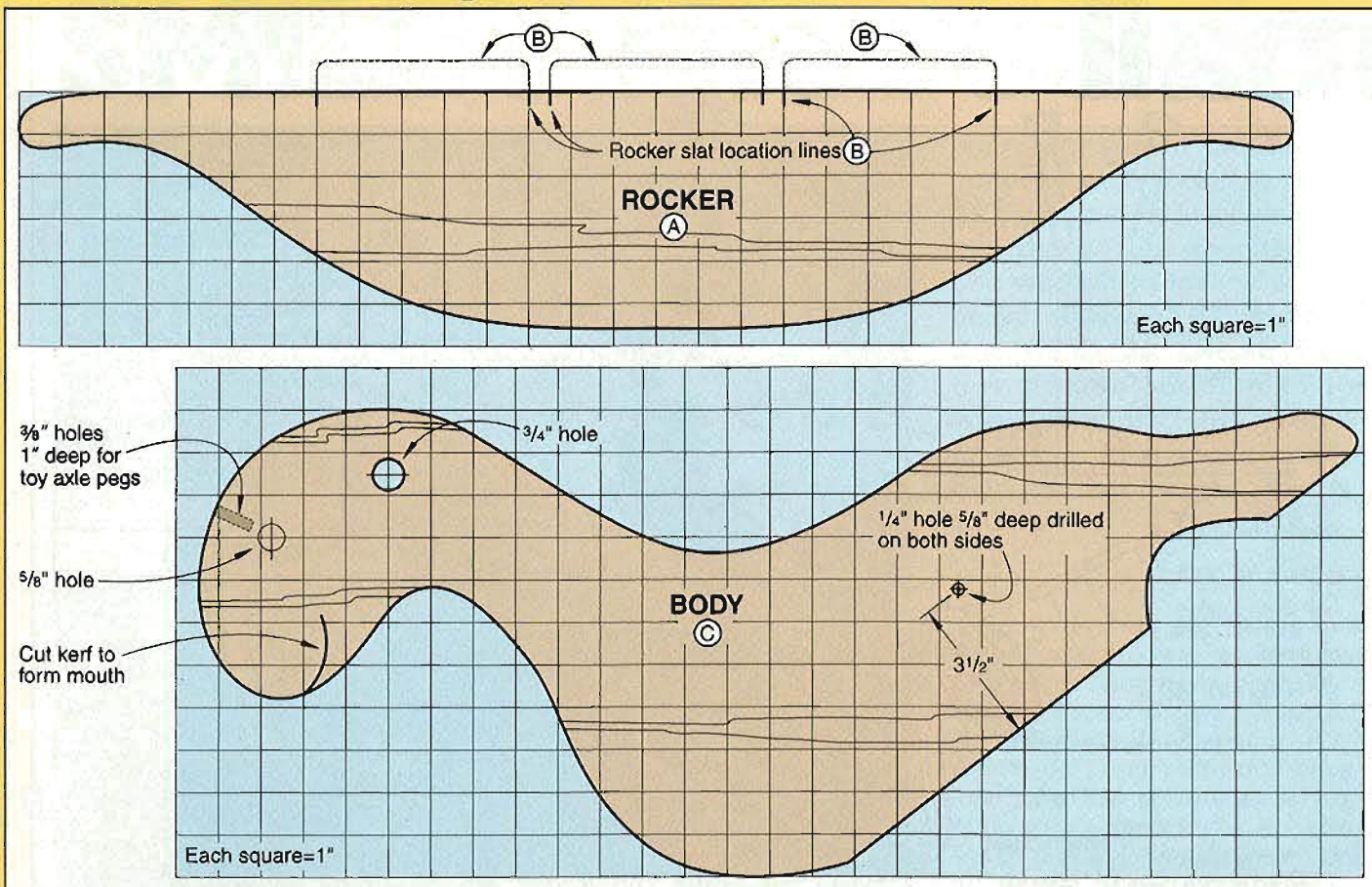
Part	Finished Size			Matl.	Qty.
	T	W	L		
A* rockers	1½"	5½"	30"	P	2
B slats	¾"	5"	13"	P	3
C* body	1½"	12"	28"	EP	1
D* shell	¾"	9½" dia.		EP	2
E* shell	¾"	6¾" dia.		P	2
F* shell	¾"	4¾" dia.		P	2
G* shell	¾"	2½" dia.		P	2
H seat	¾"	7"	6⅞"	P	1

*Initially cut parts marked with an * oversized. Then, trim each to finished size according to the how-to instructions.

Material Key: P–pine, EP–edge-joined pine.

Supplies: double-faced tape, spray adhesive, ¼" dowel pins ¾" long, 2–¼ × 2" hexhead lag screws with ¼" flat washers, #8 × 1¼" flathead wood screws, #8 finish (countersunk) washers, ⅜" dowel stock, blue, red, and green enamel paints, stain, clear finish.

SMILEY the rocking snail



3 Cut a piece of paper to 6×30", and mark 1" grid lines on it. Lay out the shape of the rocker on the gridded paper. To do this, mark the points where the rocker outline crosses each grid line. (To lay out the curved bottom, we cut a 3/16"-thick strip of wood to 1" wide by 36" long. Using a helper to position the flexible strip, we positioned one edge of the strip against the marked points on the gridded paper, and marked the curves for the rocker bottoms.)

4 Using spray adhesive, adhere the paper pattern (or the full-sized pattern you ordered from us) to the rocker blanks. Center the pattern from right to left and keep the *top* edge of the pattern flush with the planed *top* edge of the taped-together rocker blanks.

5 Use a square to transfer the slat location lines to the planed top edge of the rocker blanks.

6 Bandsaw the rockers to shape (we used a 1/4" blade). Sand the bandsawed edges smooth to remove the saw marks. Using a wood wedge, pry the rockers apart. Peel the pattern from the rocker. If necessary, splash a bit of lacquer thinner onto the paper pattern to dissolve the spray adhesive holding it down.

For lots of support, add the rocker slats

1 Cut the rocker slats (B) to size.

2 Rout 3/8" round-overs along the top edges of each slat and along all edges of the rockers where shown on the Exploded View.

3 Drill mounting holes through the slats where dimensioned and to the sizes shown on the Exploded View drawing. Sand the rockers and slats smooth.

It's time for the main body section

1 To form the main body section (C), edge-join 1 1/2"-thick stock to form a blank 12" wide by 28" long. **Important:** For additional strength across the neck, notice how we slanted our pattern on the grid and wood blank.

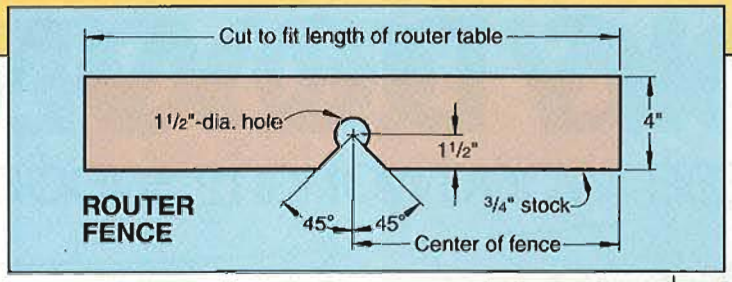
2 Using the method described under the heading ***Start with the rockers***, repeat the process to transfer the pattern, and cut the body section (C) to shape. Next, cut the mouth kerf where marked.

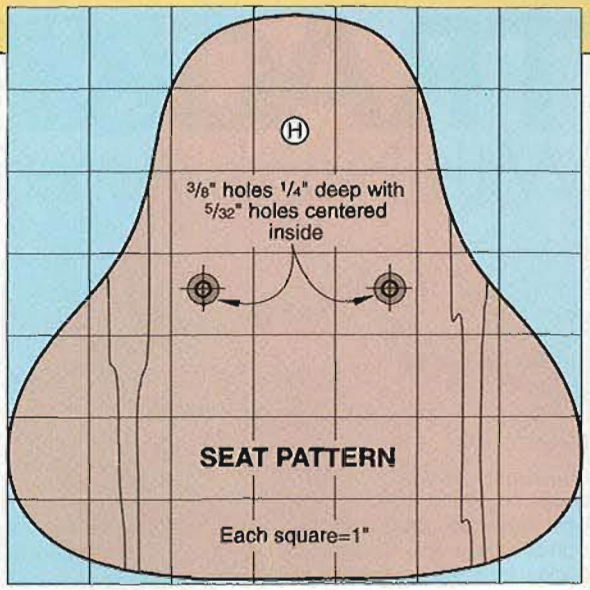
3 Bore the holes for the eye, handle, shell dowels, and antennae where marked on the body section. See the Antenna detail for reference when drilling the antenna holes.

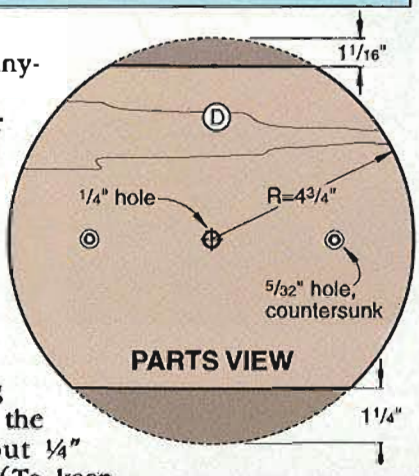
Now, build your snail a home

1 Mark the diameters on 3/4"-thick stock for the shell parts (D, E, F, G). (We edge-joined narrower stock for the largest shell piece D.) Rip the top and bottom edges of part D where shown on the Parts View drawing. Bandsaw the remaining pieces to shape, and sand the edges smooth.

2 With the centerpoints used to mark the radii, drill a 1/4" hole through shell pieces D, E, and F. Drill a counterbore and screw-mounting hole into the outermost shell part G to the sizes stated on

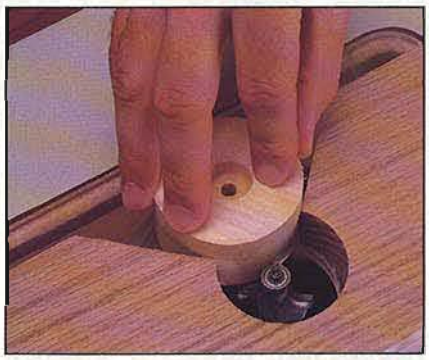






the Hole detail accompanying the Exploded View.

3 Rout a ⅜" round-over along the outside face of shell pieces D, E, F, body section C, and eye openings where shown on the Exploded View drawing. Do not rout the bottom edge of the body section or along the top and bottom of the large shell parts D. Rout ¼" round-overs on part G. (To keep our fingers safely away from the router bit, we cut a board 4" wide and as long as our router table. Then, we bored a 1½" hole and cut a V-shaped notch to the hole where shown on the Router Fence drawing. As shown *below*, we used this for support when routing the smaller shell pieces.)



Use a router fence with a V-shaped notch to safely support the round discs when routing.

Fit your snail with a seat and a handle

1 Transfer the full-sized seat pattern and hole centerpoints to ¾" stock. Cut the seat to shape. Rout a ¼" round-over along all edges of the seat (H). Next, drill a pair of mounting holes into the top of the seat where shown and dimensioned on the Seat pattern.

2 Cut a piece of ¾" dowel to 8¼" long for the handle. Locate and mark the center 1½" section of the dowel that will fit inside in the snail's head. Then, use a bandsaw or handsaw to cut three 1/16" kerfs ⅛" deep and ¼" apart (glue grooves) within the marked area.

3 Apply glue to the kerfs. Next, center and glue the handle into the ¾" hole in the snail's head. Wipe off the excess glue.

4 Bore a ¾" hole ⅝" deep into a pair of 1½" wooden balls. (To drill the holes, we clamped a ball in a handscrew clamp. Then, we centered the ball under the point of the Forstner bit, and clamped the handscrew clamp to the drill-press table to steady it.)

Sand, finish, and assemble

1 Finish-sand all the pieces. Stain the rockers, rocker slats, handle dowel, and main body section.

2 Paint the shell pieces, antennae, handle balls, and wooden buttons. Next, paint the *bottom and edges* of the seat (you'll do the top later). See the introductory photo for our color selections.

To paint the pine pieces, first apply a coat of lacquer sanding sealer—especially to the porous end grain. Let dry, and lightly sand with 220-grit sandpaper. Apply a second coat. The sanding sealer helps seal the wood, allowing the paint to build a more even coat than if painting bare wood. (We supported the pieces on blocks of wood, and painted one side of each piece. Later, we painted the other side. Next, we applied a second coat, being careful to avoid runs. We used a high-quality spray enamel paint.)

3 Using ¼" dowels to center the pieces, screw the shell pieces (D, E, F, G) to the main body section.

4 Drill the mounting holes and fasten the slats to the rockers. Then, drill the holes and fasten the snail to the slats. Glue the handle balls onto the dowel handle.

5 Screw the seat to shell pieces (D). Plug the holes and sand them flush. Mask the rest of the snail, and paint the top of the seat.

6 Sand the mating surfaces for a good glue joint. Glue the ½" and ¾" wooden buttons in place.

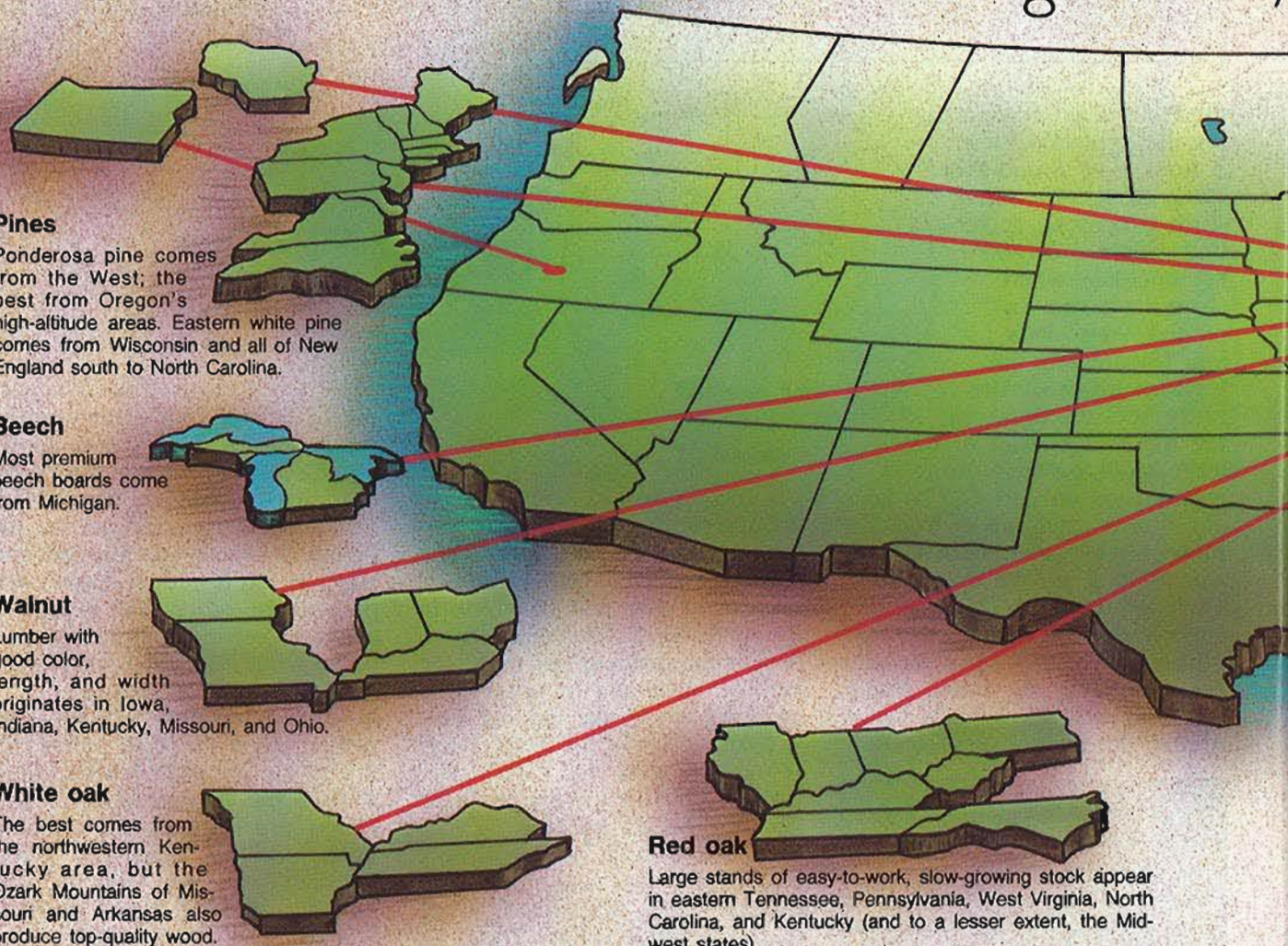
Buying Guide

• **Wood parts.** Two 1½"-diameter wooden balls, two ½" wooden buttons, two ¾" wooden buttons, and two ⅜"-diameter by 2¼"-long toy pegs. Kit no. WMSNAIL, $7.45 ppd. Cherry Tree Toys, P.O. Box 369, Belmont, OH 43718. Or call 800/848-4363 to order.

Produced by Marlen Kemmet
Project Design: Barrels of Fun, Mariposa, Calif.
Photographs: John Hetherington
Illustrations: Kim Downing

TRACKING DOWN

With North American woodworking woods,



Pines
Ponderosa pine comes from the West; the best from Oregon's high-altitude areas. Eastern white pine comes from Wisconsin and all of New England south to North Carolina.

Beech
Most premium beech boards come from Michigan.

Walnut
Lumber with good color, length, and width originates in Iowa, Indiana, Kentucky, Missouri, and Ohio.

White oak
The best comes from the northwestern Kentucky area, but the Ozark Mountains of Missouri and Arkansas also produce top-quality wood.

Red oak
Large stands of easy-to-work, slow-growing stock appear in eastern Tennessee, Pennsylvania, West Virginia, North Carolina, and Kentucky (and to a lesser extent, the Midwest states).

Print this article

Wood is wood, right? Wrong! Hardwood trees with all the favored woodworking attributes of their individual species don't grow just anywhere. Neither do your favorite softwoods. Here's where professional lumber buyers seek super stock.

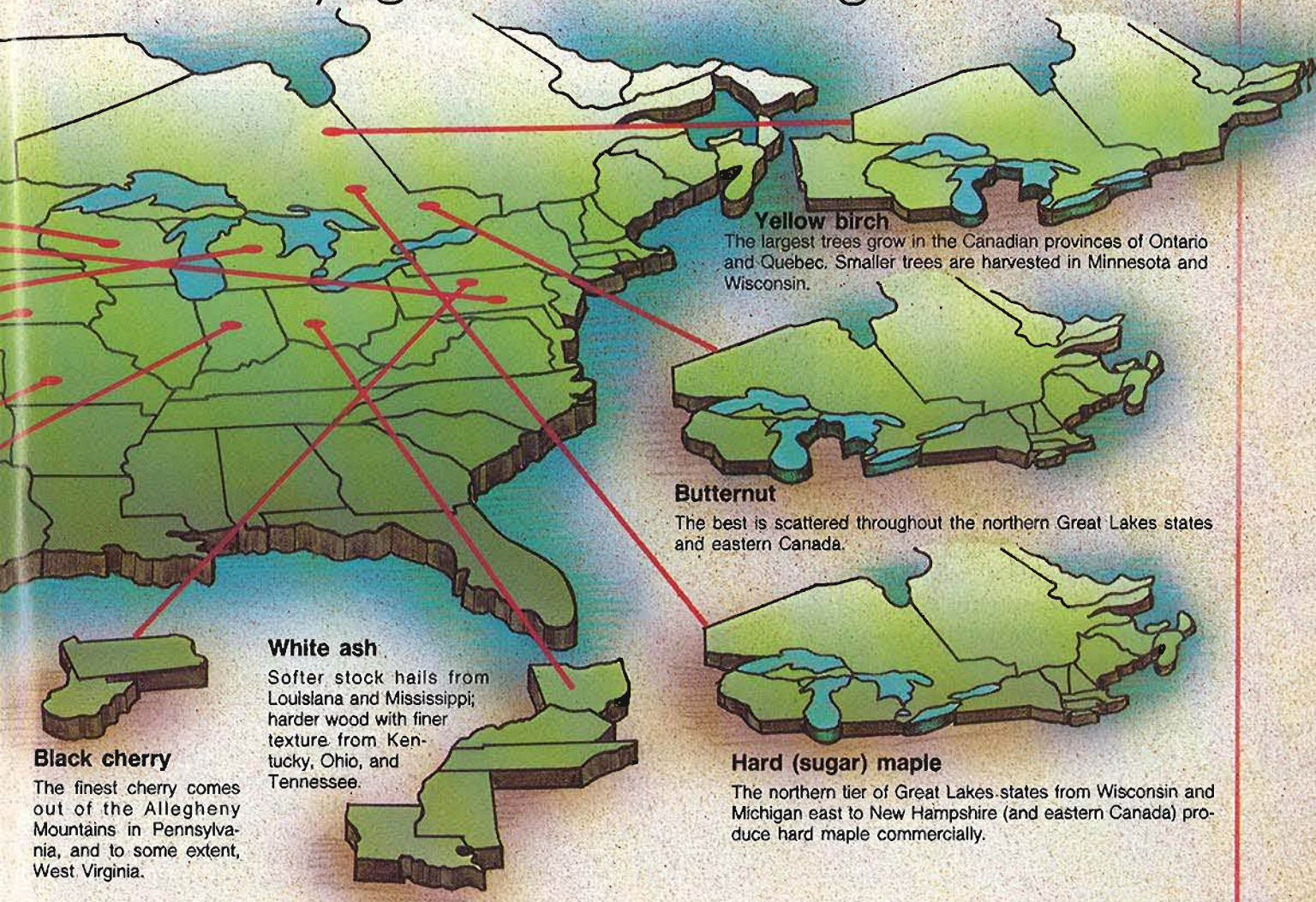
Have you ever wondered why one board, say of red oak, machines better than another from a batch you bought at your wood supplier? Or why a piece of ash stock you hefted in your friend's shop seemed heavier than one you have on hand? Well, commercial hardwood buyers will tell you that the reason for the difference stems from the wood's origin. And that also holds true for softwoods.

"By and large, the majority of the best North American hardwoods are harvested from the northerly tier of states, not the Deep South. That's from Wisconsin east to the Atlantic, then south through the Allegheny and Appalachian mountains to about the South Carolina border," claims Bob Stark. Bob is the vice-president in charge of lumber purchasing for the Kansas City-based Frank Paxton Lumber Company, one of the nation's largest marketers of cabinet-grade stock.

And exactly what does "best" mean? Bob Carr, Jr., president of the Educational Lumber Company (EDLCO), a mail-order firm specializing in Appalachian hardwoods, explains. "Hardwood—and softwood, too—from high altitudes or in cold climates—grows slower, is finer in texture, and thus easier to work than the faster-growing, less-dense woods

GOOD WOOD

where they grow makes a big difference



Yellow birch
The largest trees grow in the Canadian provinces of Ontario and Quebec. Smaller trees are harvested in Minnesota and Wisconsin.

Butternut
The best is scattered throughout the northern Great Lakes states and eastern Canada.

Hard (sugar) maple
The northern tier of Great Lakes states from Wisconsin and Michigan east to New Hampshire (and eastern Canada) produce hard maple commercially.

White ash
Softer stock hails from Louisiana and Mississippi; harder wood with finer texture from Kentucky, Ohio, and Tennessee.

Black cherry
The finest cherry comes out of the Allegheny Mountains in Pennsylvania, and to some extent, West Virginia.

from warmer climates and lower altitudes," he says. "The slower-growing trees also have tighter [more even] grain and are less likely to be discolored from mineral deposits. In fact, the reason we are located in Ashville, North Carolina, is because this [the Appalachians] is where a lot of the good wood grows."

Of course, trees depend on soil nutrients, moisture, and climate for their existence. But within those needs, every species has a unique set of demands to achieve the optimum attributes that woodworkers prefer. That's why, even within a geographical region, some conditions prove better for the growth of quality hardwood than others. Choice white oak, red oak, and walnut, for instance, tend to anchor in the humus-covered bedrock (preferably limestone) of north-facing slopes, where moisture clings and coolness reigns.

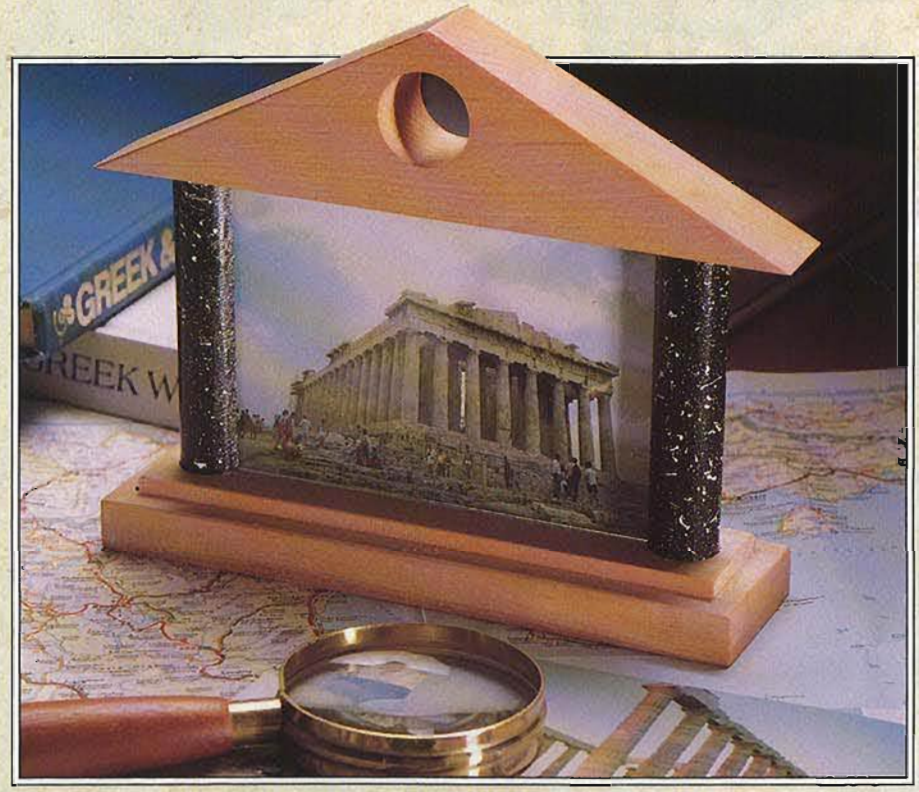
But, even given these species' preferences for growing conditions within their range, those who commercially buy hardwoods and other trees on the stump still migrate toward traditional sources that deliver an abundance (rather than just a few trees) of the good wood. The map shown, *above*, illustrates the present origins of the most popular woodworking hardwoods and softwoods, according to the wood experts we talked to.

"That's good to know," you say, "but how can I find out where the wood I want to buy comes from?" It's simple. Just ask. Reliable dealers have your satisfaction in mind. They know where the best wood in a species comes from, and they purchase it there if they possibly can.

Illustrations: Mike Henry

Print this article

OLYMPIAN



Make a snapshot something special by displaying it in imposing surroundings—a Greek temple. This stately project goes together easily, and it's just the right size for a standard 3½×5" print.

***To build the frame,** you'll need stock ¾" and 1" thick. You could substitute 1 1/16" stock for the 1" material. We used maple, but whatever turns up in your scrapwood pile will work.*

Rip and crosscut the base to ¾×2×7¼". On 1×2×7¾" material, lay out the triangular top, and mark the center for the 1" hole where shown.

See the Bottom View of Top and Top View of Base drawings, and mark the location of the ¾" holes on both pieces. Bore the holes ¼" deep with a Forstner bit chucked into a drill press.

Change to a 1" bit, and bore the hole through the face of the top piece. Back it with scrapwood to prevent tear-out.

Fit your table-mounted router with a ¼" straight bit, and adjust the fence to center the bit side-to-side on the top piece. Now, rout a ¼"-deep groove connecting the ¾" holes. (We clamped stop-blocks to the fence 6⅜" from either side of the bit.) For a clean job, make several light cuts.

Next, make the dowel carrier shown in the Column Routing drawing. Nail two ¾×1¼×12" pieces of scrapwood to a ¾×3×12" piece (we used plywood). Leave a ¾" gap between the narrow pieces.

Place a ¾×10" dowel into the channel on the jig. Hold it in place with hotmelt glue at each end. Adjust the router-table fence to center the bit under the dowel, and rout the ¼×¼" lengthwise groove. Cut two 3⅞" lengths from the dowel for the columns.

Change to a ⅜" piloted rabbeting bit, and rout the top of the base (the side with the holes) 3/16" deep on both ends and both sides. Again, take several light cuts.

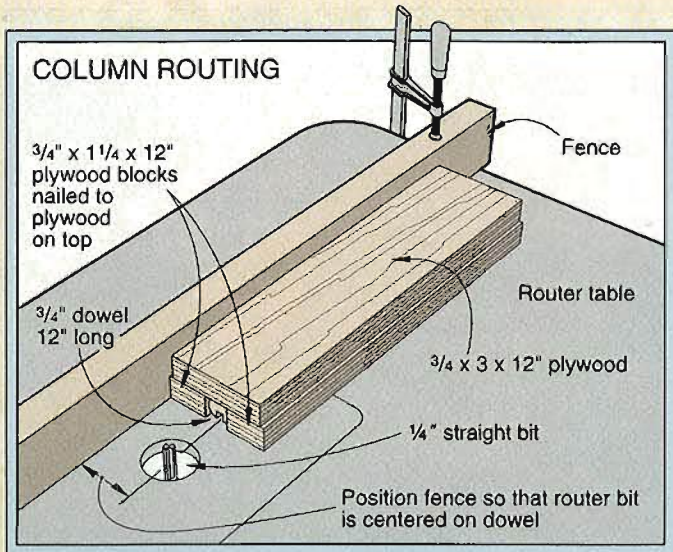
Bandsaw the top. Sand all parts, and then apply a clear finish to the base and top. Paint the columns black with white spatters to simulate marble. (For grooved, prepainted columns, see the Buying Guide, *opposite page.*)

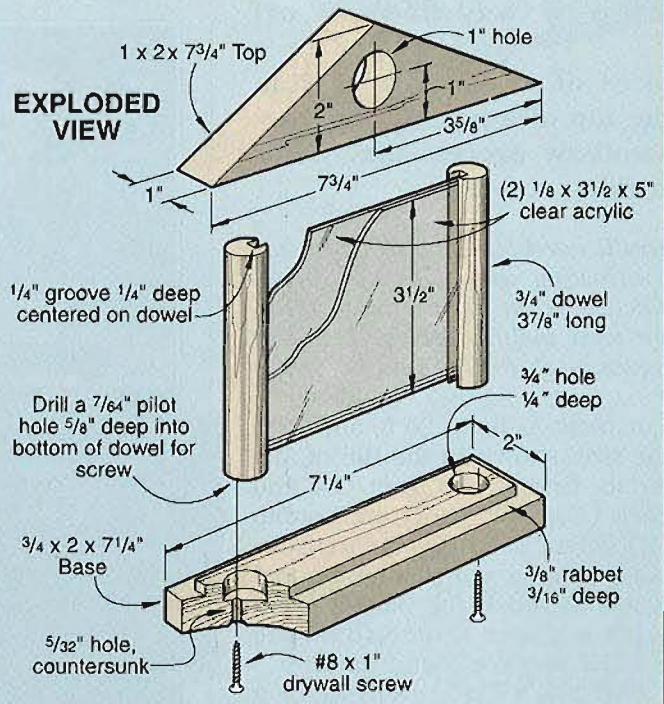
Drill the 5/32" holes through the base where shown, and countersink them on the bottom. Place a column into each base hole, with the groove facing the center. Secure the columns with a 1" drywall screw from the bottom.

Sandwich your photograph between two ⅛×3½×5" acrylic sheets and slide them into the column grooves. Finally, set the top onto the columns. ♠

DISPLAY

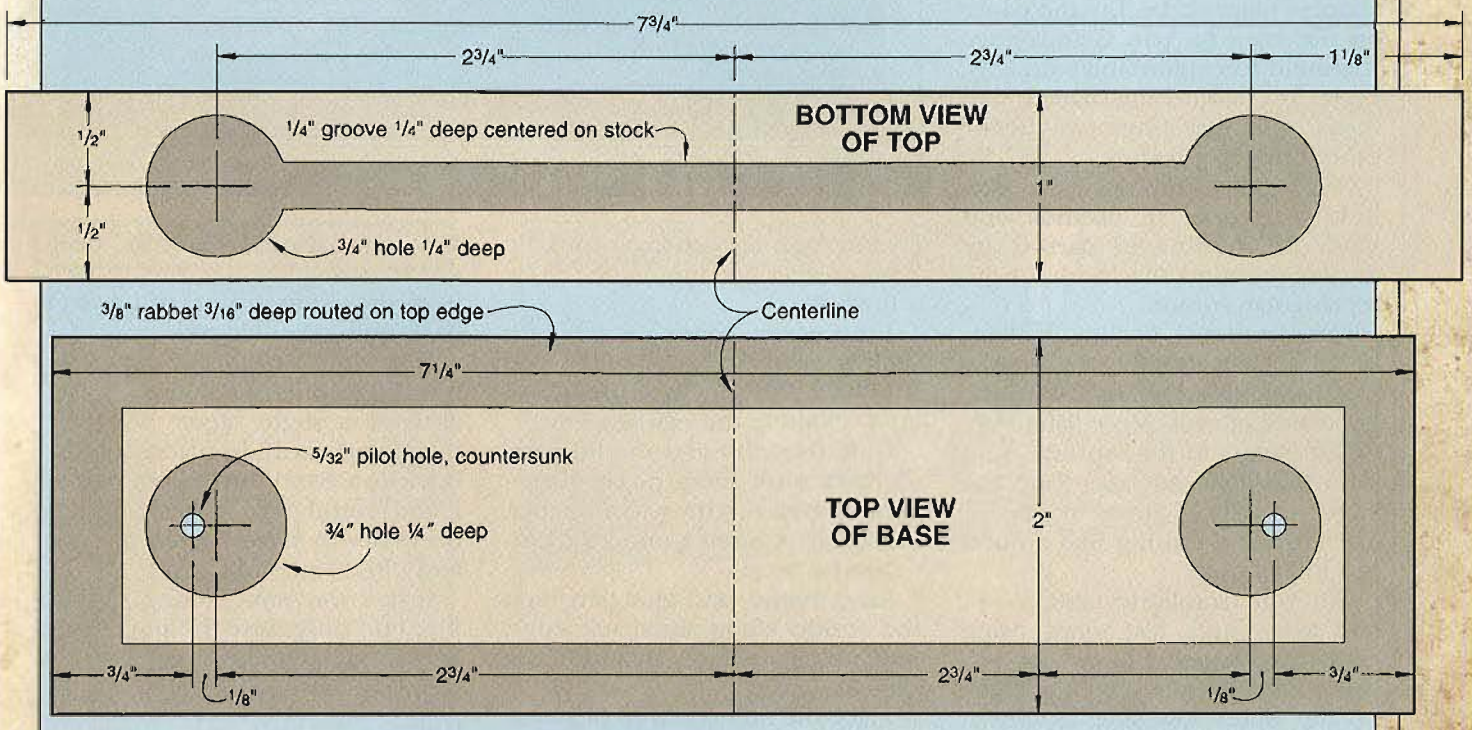
Heroic surroundings for a favorite photo


COLUMN ROUTING
3/4" x 1 1/4 x 12" plywood blocks nailed to plywood on top
Fence
Router table
3/4" dowel 12" long
3/4 x 3 x 12" plywood
1/4" straight bit
Position fence so that router bit is centered on dowel


EXPLODED VIEW
1 x 2x 7 3/4" Top
1" hole
2"
1"
3 5/8"
1"
7 3/4"
(2) 1/8 x 3 1/2 x 5" clear acrylic
1/4" groove 1/4" deep centered on dowel
3 1/2"
3/4" dowel 3 7/8" long
3/4" hole 1/4" deep
Drill a 7/64" pilot hole 5/8" deep into bottom of dowel for screw
2"
7 1/4"
3/4 x 2 x 7 1/4" Base
3/8" rabbet 3/16" deep
5/32" hole, countersunk
#8 x 1" drywall screw

Buying Guide

Acrylic sheets, columns. Two 3½×5" acrylic sheets, $4 ppd. in the U.S. Add $4.50 for two grooved, finished columns. Schlabaugh & Sons, P.O. Drawer 327, Kalona, IA 52247, call 800/346-9663.

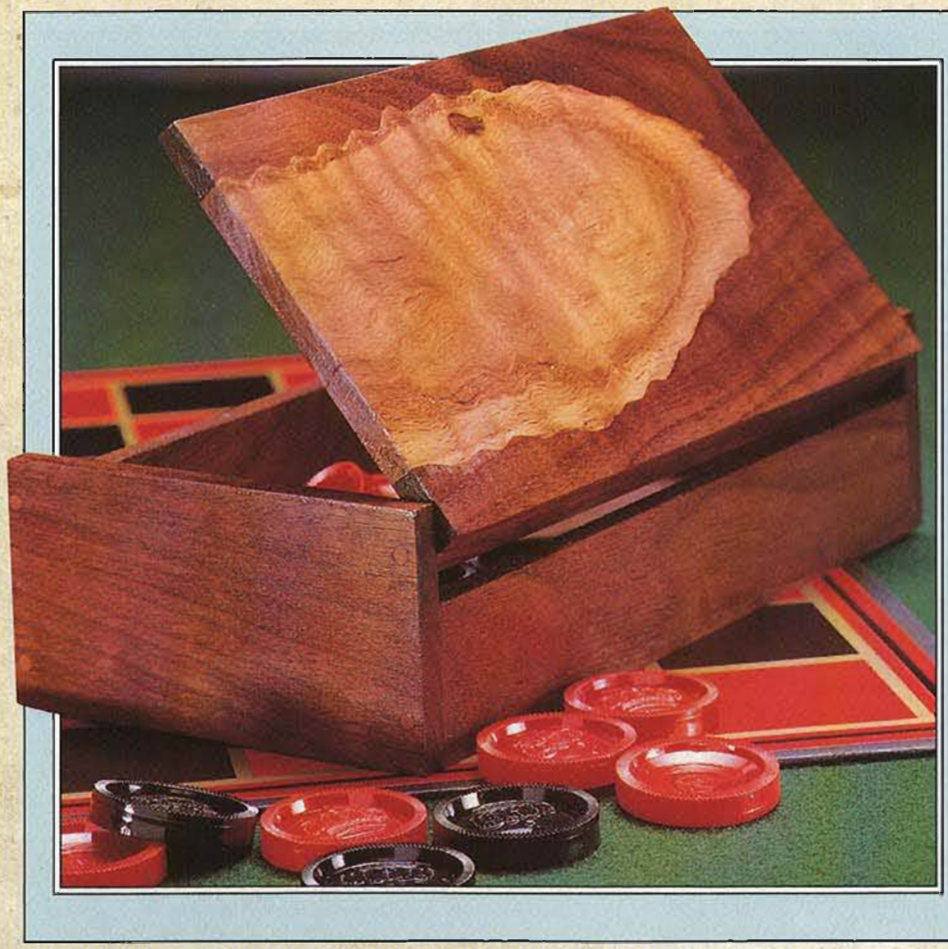


Project Design: ©Schlabaugh and Sons Photograph: Wm. Hopkins Illustrations: Mike Henry; Kim Downing

Print this article

BEAUTY AND

Looking for a great way to show off fine figure in a piece of wood? Inlay it into the top of a box. It's an easy scrollsaw process that yields striking results.



You'll need *¼"-thick stock in two contrasting woods, one with distinctive grain for the inlay piece. We used walnut for the box and figured oak for the inlay.*

Cut parts A, B, C, D, E, and F to the sizes shown in the Bill of Materials. Groove the front (B) and back (C), and rabbet the bottom (E) where shown in the joint detail. Select a contrasting figured wood as stock for part G. Start with a piece larger than the 4×7½" size you'll end up with.

Cut a 4×7½" opening in a sheet of plain paper. Lay the paper on the stock for part G and move it around to explore inlay designs. Look for boomerang-shaped patterns, diagonal lines, waves, or other attractive features.

When you find one you like, hold the paper in position and mark the outline of part G by drawing around the inside of the rectangular cutout.

Cut out part G, making it slightly larger than the lid (A) by sawing just outside the line. With the good side of each piece facing up, fasten part G to the top of the lid with double-faced tape. Sand the edges of part G flush to part A. Then, draw a cutting line around the inlay figure.

Tilt your scrollsaw table to 4°, and saw out a test inlay, using two taped-together layers of ¼"-thick scrapwood. Keep the inlay on the table's low side, as shown on the *opposite page.* Drop the inlay cut from the top layer into the bottom-layer opening to check for a flush fit.

If necessary, adjust the table tilt slightly and test again. When you achieve a flush fit, saw the lid inlay (G) along the marked lines.

Glue the inlay and the lid parts together on a scrap piece of plywood covered with waxed paper. Clamp by pinning around the outside with brads.

Sand the lid, and glue part F on the inside along the back edge. Assemble parts B, C, D, and E, but do not glue E.

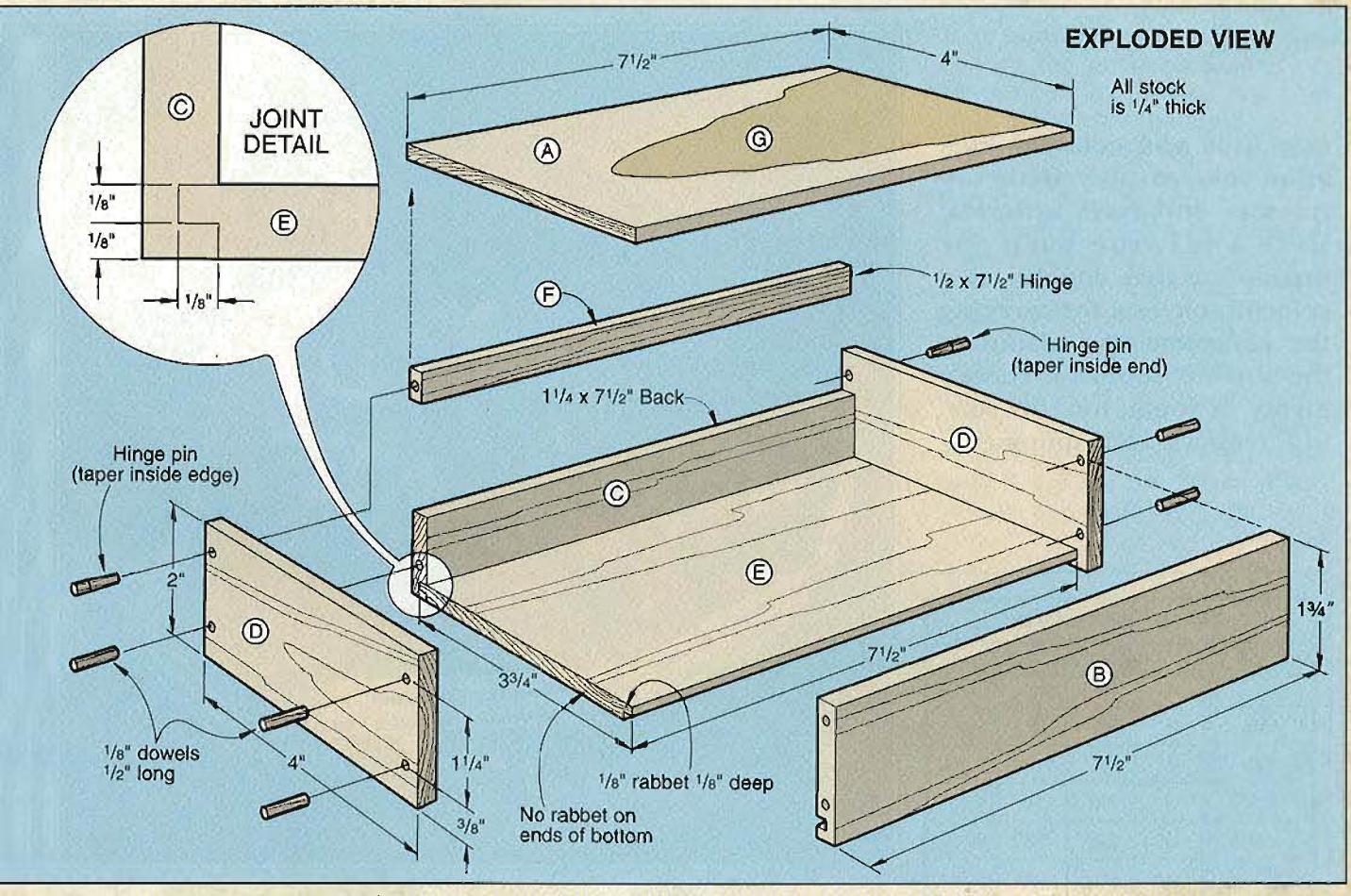
Place the hinged lid in position, and then secure it with masking tape. Drill the ⅛" holes ⅝" deep where shown. Glue the dowels into the front holes and lower back hole on each end.

Cut two 1" lengths of dowel for the hinge pins. Sand one end of each to a slight taper. With the pins temporarily in place, test the lid action. Sand the bottom of part F and round over its back edge as necessary to allow the lid to open and close smoothly.

Install the pins, gluing on the box end only. Saw the pins flush, and then sand the box. Apply a clear oil finish.

Illustrations: Mike Henry
Photograph: Wm. Hopkins

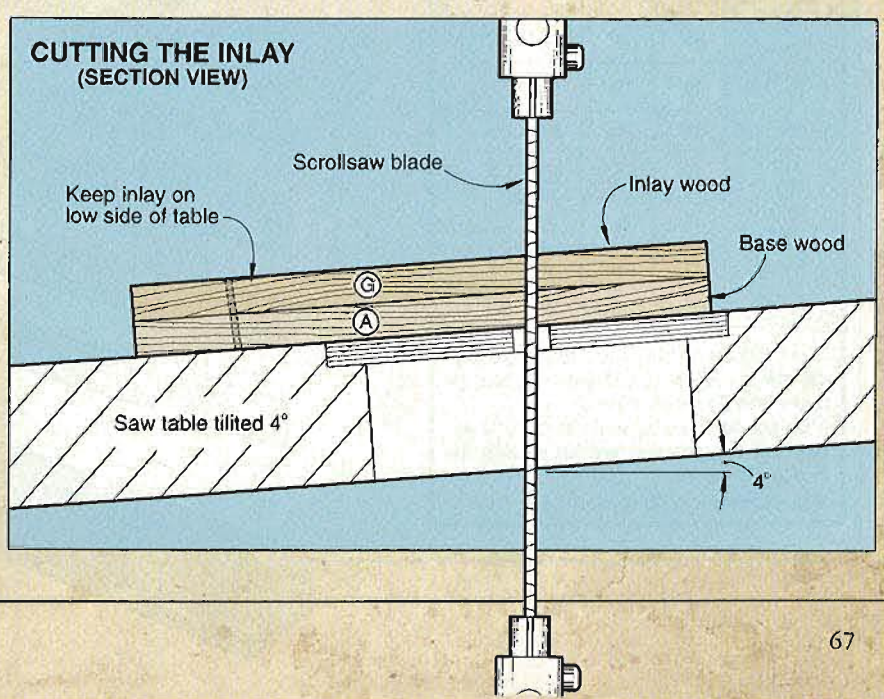
THE BOX A happy marriage of contrasting woods



Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
A Lid	1/4"	4"	7 1/2"	W	1
B Front	1/4"	1 3/4"	7 1/2"	W	1
C Back	1/4"	1 1/4"	7 1/2"	W	1
D Ends	1/4"	2"	4"	W	2
E Bottom	1/4"	3 3/4"	7 1/2"	W	1
F Hinge	1/4"	1/2"	7 1/2"	W	1
G* Inlay	1/4"	4"	7 1/2"	O	1

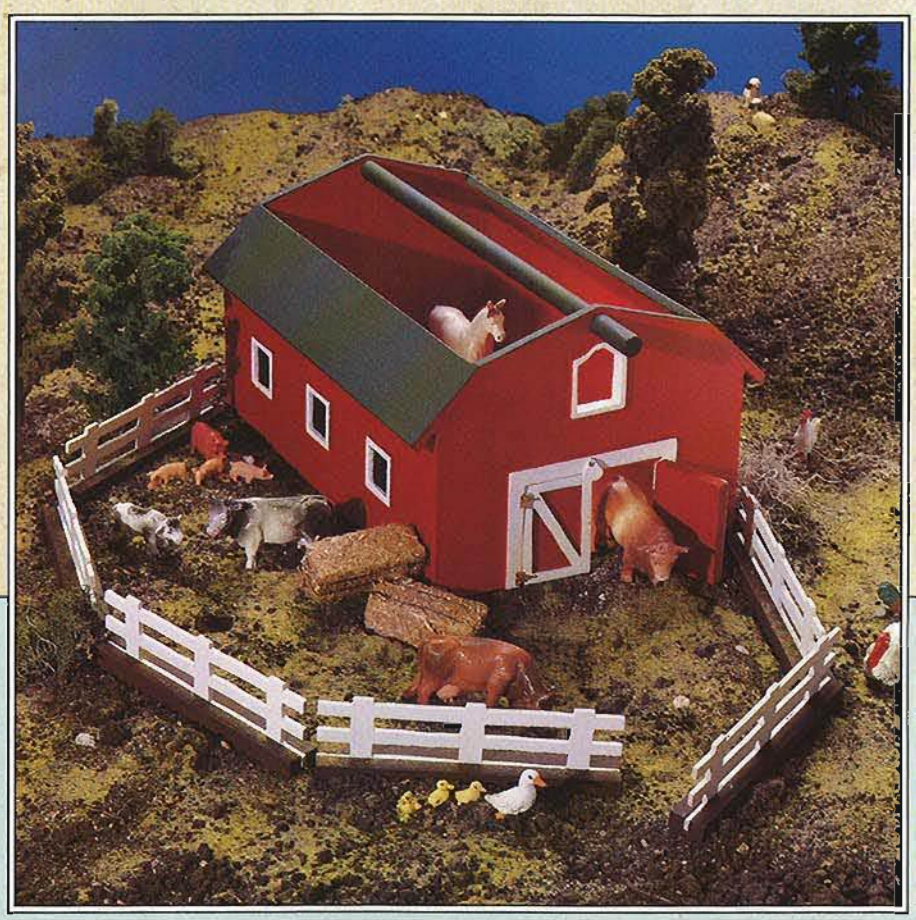
*Before cutting this piece, follow the steps in the text to determine the inlay design.
Material Key: W-walnut, O-oak



CRAFT SHOP

Farmyard fun for the sandbox set

LITTLE RED



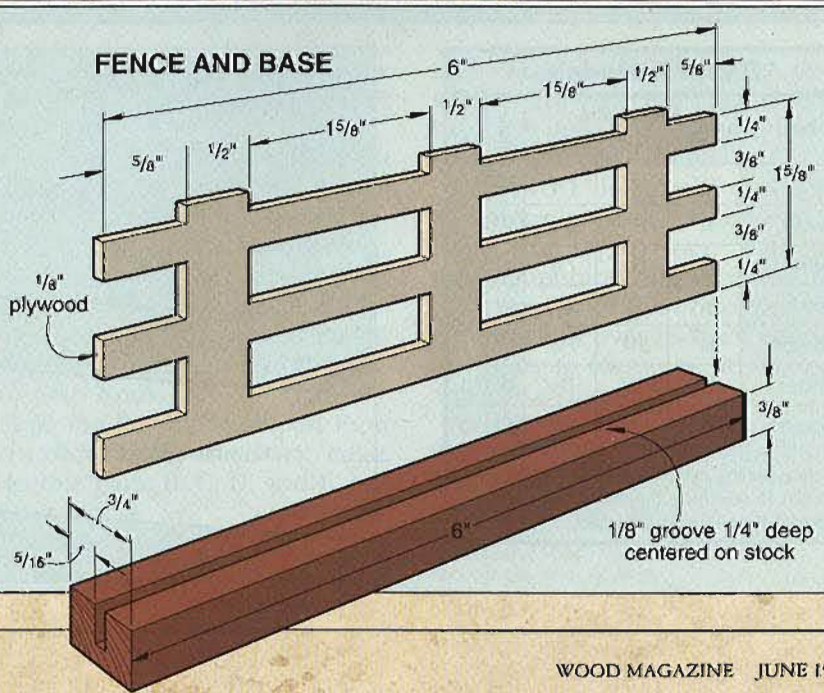
City kids and country kids alike love to play with toy tractors and farm animals. Here's just the barn for them—one that doubles as a colorful tote box for carrying the complete spread out to the sandbox south 40. There's plenty of room, too, for storing livestock and equipment.

Print this article

Bill of Materials

Part	Finished Size T	Finished Size W	Finished Size L	Matl.	Qty.
A ends	¼"	6½"	8"	P	2
B sides	¼"	4½"	11½"	P	2
C bottom	¼"	7½"	11½"	P	1
D roof	¼"	2¼"	12"	P	2
E loft door trim	⅛"	1 7/16"	2¾"	P	1
F door frame	⅛"	3"	4½"	P	1
G window trim	⅛"	1¼"	1¼"	P	8
H* doors	¼"	1¾"	2½"	P	2
I* door trim	⅛"	1¾"	2½"	P	2
J** fence base	⅜"	¾"	6"	B	6
K fence	⅛"	1⅝"	6"	P	6
L handle	½" dia. dowel		13⅜"	B	1

*Cut the doors (H) out of front (A) according to the how-to instructions. Use waste cut from the door frame (F) for door trim (I).
**Do not cut fence bases to length until you have cut the groove in accordance with the how-to instructions.
Material Key: P-Baltic birch plywood; B-birch



TOTE BARN

Rip and crosscut parts A, B, C, D, E, F, and G to the sizes shown in the Bill of Materials. Tilt your tablesaw blade to 45°, and rip the top edge of each part B, cutting so the width of the good face of the stock is 4¼".

Photocopy the Full-Sized Front Pattern for the barn on *page 70*. Adhere the pattern to one part A with spray adhesive or rubber cement. (You also could trace the pattern onto your stock with carbon paper.)

Stack the patterned piece on top of the other part A, holding them together with double-faced tape. Scrollsaw or bandsaw along the outside pattern line. Then, with a ½" Forstner bit chucked into a drill press, bore through the top piece and ⅛" into the bottom piece, a total depth of ⅜". Separate the two pieces.

Transfer patterns for parts E and F to the stock. Scrollsaw the loft door trim (E) along the outside pattern line, and the door frame (F) along the inside line. Glue both to the barn front (the piece with the hole through it).

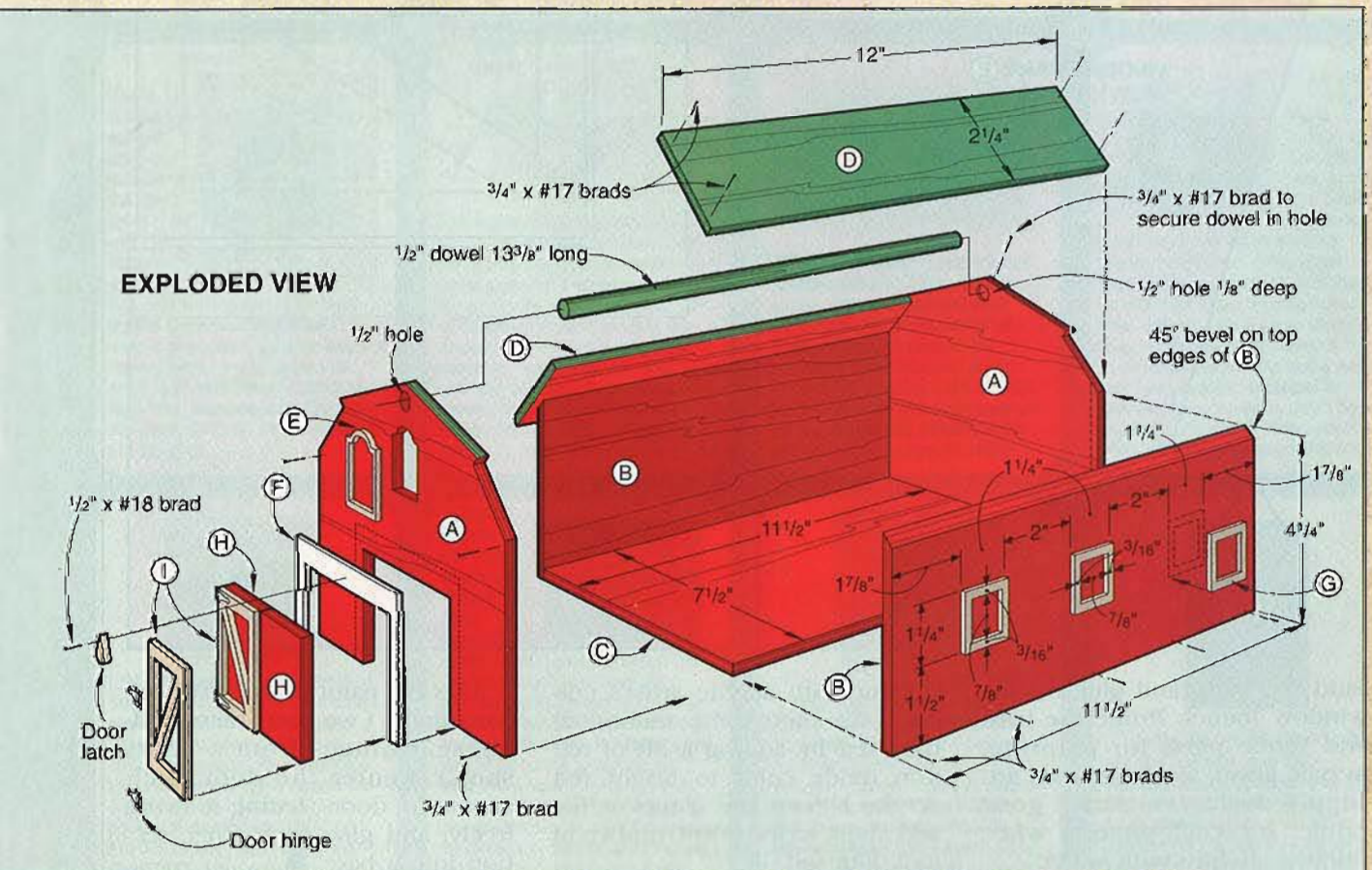
Drill a blade start hole where shown, and scrollsaw the loft-door opening. Then, saw the door opening, guiding on the inside edge of the door frame. Cut the waste in half for the doors (H). Scrollsaw the inside cuts on the door trim (I), and then glue the trim to the doors. Make mirror-image doors by flipping one trim piece over before gluing it on.

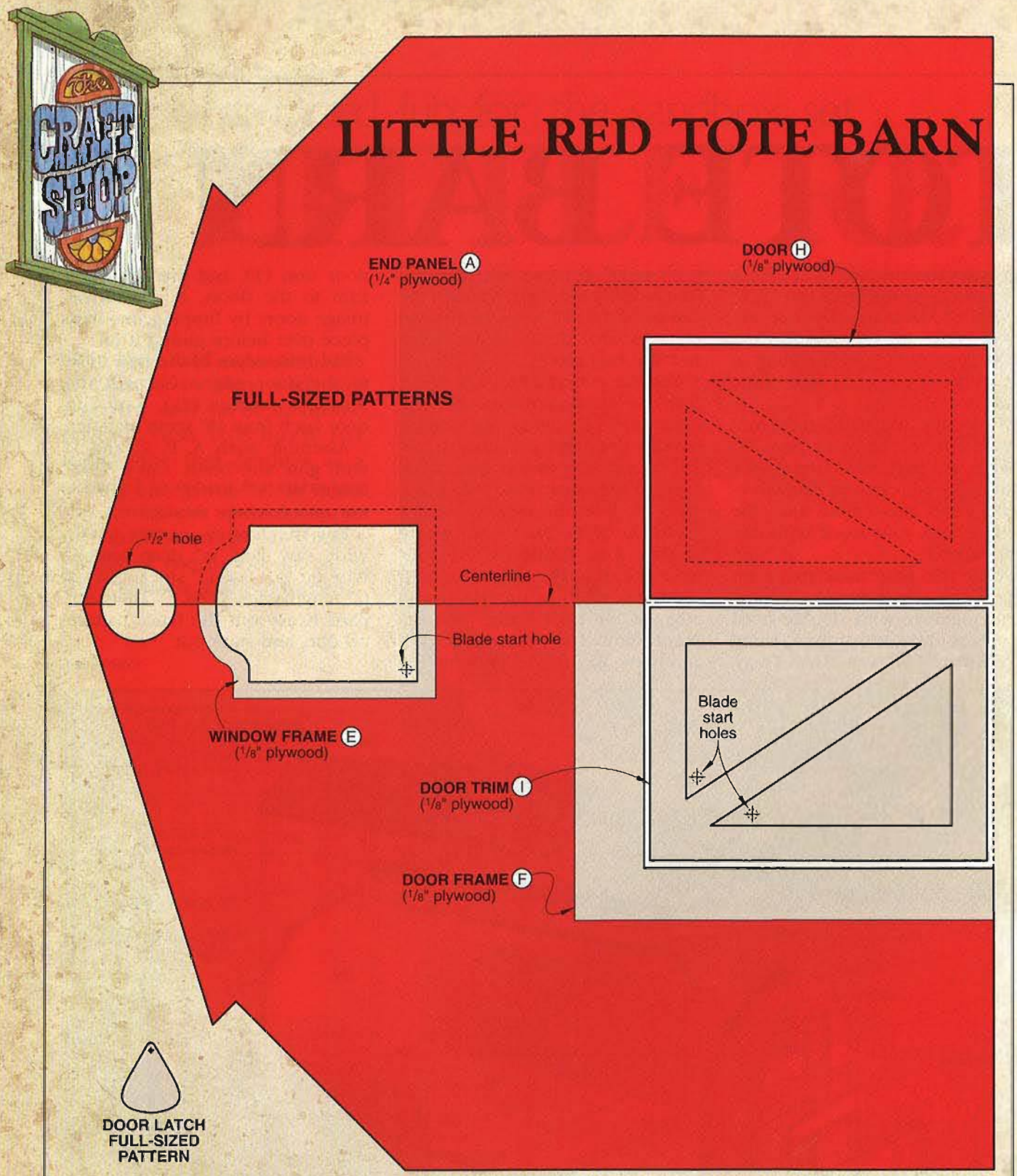
Sand the edges of the trim flush to the door edges. Cut out the window frames (G). Saw the door latch from ⅛" scrap material.

Assemble parts A, B, C, and D with glue and brads. Cut a 13⅜" length of ½" dowel, and glue it into place where shown.

For the fences, center a ⅛"-wide saw kerf ¼" deep lengthwise on ⅜ × ¾ × 37" stock. Cut six 6" lengths for parts J. Then cut parts K, lay out the fence pattern on one, and stack-cut.

Continued





Sand the barn, and glue on the window frames. Prime the barn and fence parts for painting. Acrylic gesso, available from art-supply dealers, makes a great primer for craft projects when thinned slightly with water.

Paint with acrylic artist's colors. (We mixed the traditional barn red by adding a bit of red iron oxide color to bright red acrylic.) Paint the fences white and their bases burnt umber to look like soil.

After the paint dries, attach the barn doors (we used brass dollhouse T-hinges from a crafts shop). Center the door latch above the doors, letting it swing freely, and glue each fence section into a base.

Project Design: Larry Johnston Illustrations: Mike Henry; Kim Downing Photograph: Wm. Hopkins

ADVERTISEMENT

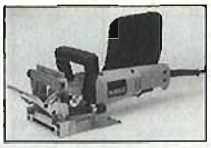
FATHER'S DAY GIFT LIST

Father's Day is June 20th. Mark the items you want, tear out this section and casually leave it where your family can find it. They'll get the hint!

STAINED GLASS

☐ Compliment your wood cabinets and clocks with stained glass or etched glass! Informative, 80-page color catalog shows you how. Complete line of glass, patterns, tools, and supplies. Send $4.50 for catalog. **DELPHI STAINED GLASS,** 2116 E. Michigan Ave., Lansing, MI 48912. 1-800-248-2048.

☐ Craft Supplies USA offers the finest selection of woodturning tools, machinery and accessories available anywhere. Also available are pen and pencil kits as well as many other project kits. Send $2.00 for a 48-page color catalog, refunded with order. **CRAFT SUPPLIES USA.** 1287 E. 1120 S., Provo, UT 84606. Phone 801-373-0917.

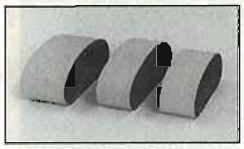


☐ $225 takes home this DeWalt heavy duty plate jointer kit model number #DW682K. Quantities are limited, so order yours today to assure delivery for Father's Day. We offer FREE FREIGHT to the 48 contiguous states and same day shipping. Order now from the **TOOL CRIB,** P.O. Box 1716, Grand Forks, ND 58206. Toll free 1-800-358-3096. Fax 1-701-746-2857. Visa, MasterCard and Discover accepted.

☐ The best handsaw for ALL woodworkers! Craftsmen around the world have discovered the secret of better quality work. The Razor Saw cuts by pulling, and will give a cleaner, more accurate cut in half the time. ORDER toll free, ONLY $23.95, postpaid. 800-537-7820. **THE JAPAN WOODWORKER,** 1731 Clement Avenue, Alameda, CA 94501.

☐ Buy someone (or yourself) some time for Father's Day! Don't spend hours with a hand-held belt sander. A Performax drum sander will dimension stock to a precise uniform thickness, clean up glued panels, and finish sand the thinnest veneers. Prices start at $300. Brochure $1. **PERFORMAX PRODUCTS, INC.,** 12211 Woodlake Drive, Dept. WDCS, Burnsville, MN 55337. 1-800-334-4910 or 612-895-9922.

☐ Family favorite from yesteryear! Build this Taos-style daybed with over 20 cubic feet of cedar-lined chest beneath for year 'round enjoyment. Perfect for reading or lounging by the window, spare bed, toy or storage chest. Over 6 feet long, but specially designed seat/lid is light and easy to lift. Send $14 for plan, or $1 (refunded with order) for brochures showing other southwestern furniture classics. **DESERT ROSE,** P.O. Box 776, Denver, CO 80201.



☐ The Ultimate Sanding Belt! Industrial Abrasives new WHITE BELT has a stearate non-loading top coat which lubricates the belt and eliminates the buildup of pitch and sawdust. Get consistently great finishes on all your woodworking jobs! Call 1-800-428-2222 for information on this revolutionary new product. **INDUSTRIAL ABRASIVES CO.** P.O. Box 14955, Reading, PA 19612.

☐ The Delta 12" Portable Planer surfaces stock from 1/8" to 6" thick. Its solid steel 2-knife ball-bearing cutterhead assures maintenance-free operation. High-speed, double-edged, reversible knives project only .065" above the cutterhead surface reducing kickback & noise. Cutterhead lifts & lowers effortlessly on 4 precision ground steel columns. Full 15 amp motor powers cutterhead & feed rolls. Feed rate adjusts under load for optimum planing. Backed by Delta's 2-year limited warranty. Call for dealer nearest you 1-800-438-2486. In Canada, 519-836-2840.

☐ Variable Speed Scroll Saw from Penn State Industries. A variable speed scroll saw is a necessity for cutting metals, plastics and hardwoods where slow speeds are necessary. Penn State's new US-15 saw features infinity variable speeds from 400-1,800 cpm with full power at all speeds. Only $169.95 (add $10 UPS shipping) from **PENN STATE INDUSTRIES,** 2850 Comly Rd., Philadelphia, PA 19154. Credit card orders taken by phone: 1-800-288-7297.

☐ Eagle America introduces their new line of U.S.A. made industrial quality, carbide tipped saw blades! The line includes radial arm, mitre and compound, table saw and rip saw blades as well as their special Eagle Everything and Eagle Thin blades. As a **Father's Day Special** cut out this section and mail it along with a copy of your invoice and receive a **$10 rebate.** This offer is available until May 31, 1993. Call or write for introductory brochure which includes useful saw blade knowledge and tips. **EAGLE AMERICA,** P.O. Box 1099, Chardon, OH 44024. 1-800-872-2511.

☐ Every woodworker needs a wood moisture meter to insure the quality of his project. The Delmhorst Model J-88 has an easy-to-read LED Display which indicates 10 ranges of moisture content between 6% and 20%. This instrument is ideal for a woodworking shop or the serious craftsman. Makes a great gift for Father's Day!! For a complete catalog or to place your order, call 1-800-222-0638. **DELMHORST INSTRUMENT CO.**

☐ Genuine Aladdin® Solid Brass Lamp with Opal Waterfowl scene shade. Functional, beautiful, complete lamp differs little from original 1908 Aladdin design. Choose oil burning #8136C or electrified #8137C, both $119.95 plus postage and handling. 800-843-3320. **VAN DYKES,** Box 278, Woonsocket, SD 57385.

☐ Ready to assemble and finish kits, include desks, chairs, dining tables, hutches, sideboards, and living room occasional tables. Beautiful Queen Anne style available in Cherry-Oak-Mahogany-and Walnut. Catalog also includes various legs and table bases for the serious woodworker. **ADAMS WOOD PRODUCTS, INC.** Dept. M-19, 974 Forest Drive, Morristown, TN 37814. 615-587-2942.

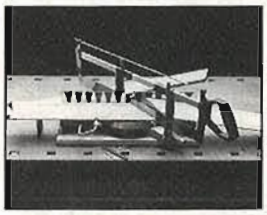
☐ **Econ-Abrasives carries** Velcro® backed discs in both 5 and 6 inch diameters. They are available in plain (no hole) or vacuum holes, with 5 or 8 hole pattern, to fit Bosch and Porter Cable random orbital sanders. All discs are aluminum oxide resin bonded, on a heavy "E" weight paper. Naturally, Econ-Abrasives carries hundreds of woodworking related items; for the hobbyist and serious craftman alike. For more information call or write to: **ECDN-ABRASIVES,** P.O. Box B865021, Plano, TX 75086. Toll-free 1-800-367-4101

☐ Build tomorrow's heirloom today! "Merrilegs", designed to capture the spirit and beauty of a child's loyal steed, also provides pleasure and satisfaction for the woodworker. Full-size, easy-to-make plan #121, $14.00 ppd. Catalog of 200 professionally designed plans for building furniture $3.00. **FURNITURE DESIGNS, INC.,**1827 Elmdale Ave., Glenview, IL 60025. Mastercard, Visa. 708-657-7526.

☐ Biscuit joining is an easy way to produce strong joints. Freud's Biscuit Joiner is designed for the woodworking professional who relies on his power tool. And for a limited time, when you buy our joiner, we'll send you a check for $30. Call **FREUD** for complete details and for a dealer near you. 1-800-472-7307.

The Great MARLIN CARVING MACHINES

☐ If you enjoy wood carving or wood working, a versatile Marlin wood carving machine may be just what you need. Sign carving, three-dimensional carving of decoys, sculptures, plaques, panels and moldings as well as gun stocks and furniture pieces are easily carved on one of the three models of machines Marlin offers. Brochure $1.00. **MARLIN INDUSTRIES, INC.** Rt. 70, Box 191, Cashiers, NC 28717. 704-743-5551.



☐ Swedish miter makes easy work of cutting perfect picture frames and mouldings with its thin, tensioned 18tpi blade. Max size of workpiece at 90°; 6 1/2" wide x 4 1/2" high. 5 pre-set stops. $153.25 ppd. **GARRETT WADE CO.,** 800-221-2942.

☐ The RBI Hawk Scroll Saw, 4-in-1 Woodplaner, Router Tables, and more. All these plus much more can be found in our new full color "All Products" catalog. See the entire line of products and accessories from RB Industries, The American Toolmaker. Catalog FREE. Call 800-487-2623. **RB INDUSTRIES,** 1801 Vine St., P.O. Box 369, Harrisonville, MO 64701.

WOODS OF THE WORLD WOODWORKERS Source

☐ Collectors' Sample Kit. 30 gorgeous woods. 1/2" x 3" x 6", sanded finish. Ideal for collectors, cabinet and furniture makers, designers, and architects . . . $39 ppd cont. US. Including BOOK OF FINE HARDWOODS with 70 color pictures . . . $51 ppd cont. US. **WOODWORKERS SOURCE,** 5402 S. 40th Street, Phoenix, AZ 85040. 1-800-423-2450.

☐ Like a third hand. Provides that extra support so often needed. Its rugged, heavy-duty, all-steel construction makes it a tool you'll depend on for years. Roller is 13" long, galvanized and ball bearing. Adjusts in height from 25 3/4" to 45". When you're done it folds flat. #HPR-13, $39.95 + UPS. **HTC PRODUCTS, INC.** Toll free 800-624-2027.

MADE in USA

☐ Executive Wood Toys! Now you can create this 1929 Ford van and many others like it from our detailed and easy-to-read patterns. We offer you a complete line of patterns, parts, and wheels. Make this Father's Day one to remember with our Executive Wood Toys. Send $1.00 for catalog to: **TOYS AND JOYS,** Box 628 GL. Lynden, WA 98264.

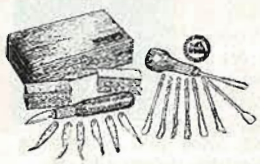
☐ The DR® TRIMMER/MOWER is the revolutionary string trimmer on wheels which mows everything from whole lawns to tough, waist-high growth with ease. When combined with patented Beaver Blade®, a 12" chainsaw disc, the DR® TRIMMER/MOWER turns into a powerful brushcutter that can safely cut brush and trees up to 5" in diamter. **COUNTRY HOME PRODUCTS,** Dept. H10315, Ferry Road, Charlotte, VT 05445. 1-800-446-8746.

☐ We are offering a Futon Soft Bed Frame Plan (Twin & Full Size) for $14.95 or we have a Queen Size plan available for $14.95. Sofa frame height is 12" off the floor for comfortable sitting and easily reclines to extra sleeping space. Color catalog $2 or free with order. **SPECIALTY FURNITURE DESIGNS,** 797 W. Remus Rd., Dept W-17, Mt. Pleasant, MI 48858. 1-800-892-4026. Visa/MC. MI res. add 4%.

Ebac WOOD DRYING SYSTEMS

☐ Savings add up fast with an Ebac Dry Kiln. Dry 50 to 3000 BF of lumber for just 2 cents to 5 cents per board foot. 3 models are priced under $3,000. Gives highest quality lumber at 6% to 8% moisture content. Very easy to operate. **FREE** brochure. **EBAC LUMBER DRYERS,** 106 John Jefferson Road, Suite 102, Williamsburg, VA 23185. 800-433-9011.

☐ This hot branding tool allows the user to brand wood projects quickly and easily. It heats in approximately 1–2 minutes with an ordinary propane torch. Has solid brass head with 1st line reading: HAND CRAFTED BY and 2nd line your choice, up to 20 characters and spaces. $32.00 ppd. 1, 2, 3 and 4 line units also available with standard top line or other copy. Electric units also available. Order TOLL-FREE at 1-800-826-7606. By mail: **NOVA TOOL CO., PO Box 29341, Dept. BGL, Lincoln, NE 68529.**

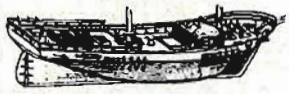


☐ Father's Day '93 will be any carvers most memorable with this gift of Warren's finest combination Whittlers/Carvers Kit in custom redwood box. 1993 Wood Shop Special #COMBI-TCE $89.95 p.pd(USA). Free pattern and instruction booklet included. Contact **WARREN TOOL CO., INC.** 2209-1 Rt. 9G, Rhinebeck, NY 12572. 914-876-7817. NY residents add state sales tax.

☐ CP Tools AP 150. A 12.5" planer has 2 HP motor, 26 ft. S.P.M. A dependable lightweight machine, 65 lb. Minimum maintenance designed for small professional shops or the hobbyist. A perfect Father's Day gift for any man. $345. Call or write for information. **CP TOOLS, INC.,** 14257 E. Don Julian Rd., City of Industry, CA 91746. 1-800-654-7702.

☐ Parts for making beautiful gold plated wooden barrel pens, pencils, rollerball pens, fountain pens plus more. Kit and instructions available. Easy to make. Call or write: **THE BEREA HARD WOODS CO.** 6367 Eastland Rd. Brookpark, OH 44142. 216-234-7949.

☐ Porter Cable's new 5" Quicksand Random Orbit Sander Kit, Model 334K, features a unique dust pick-up system and a swirl free finish with a 3/32" orbit and 12,000 orbits per minute. Kit includes sander, 100 sheets of sandpaper and a steel carrying case! Available at **INTERNATIONAL TOOL CORPORATION** for $99. Call 1-800-338-3384.



☐ All gentlemen shipwrights and able bodied modelists who have a mind to provide for themselves amusement and satisfaction through the traditional craft of ship modeling, an opportunity now offers to acquire, through the minimal cost of one Colonial Dollar ($1.00) a catalog of fine and unique ship model kits, plans, books and fittings from the renowned company of **MODEL EXPO**, P.O. Box 1000, Mt. Pocono, PA 18344.

HERITAGE
Building Specialties

PROJECT-PAK®
A WOODWORKERS DREAM COME TRUE!
- Save money on projects
- Reduce waste by 25-50%
- Eliminate layout headaches

The ONLY way to buy wood!
Call for details & catalog today.
1-800-524-4184
205 N. Cascade • Fergus Falls, MN 56537

WE WORK FOR YOU!

ENLON™

☐ The Enlon 16" Band Saw comes with a 1 1/2 H.P. motor quality cast iron table and balanced aluminum wheels. 3 speeds, includes Rip Fence and miter gauge. $490 plus shipping. To order or receive free catalog, call 1-800-888-9697 or write **ENLON IMPORT CORP.**, 19400 E. San Jose Ave., City of Industry, CA 91748.

☐ Does woodturning fascinate you? Join the AMERICAN ASSOCIATION OF WOODTURNERS and you will be inspired to start making shavings! Membership includes: a quarterly journal filled with woodturning articles, tips, and projects; a directory of AAW members, local chapters, and suppliers; information about national symposiums. Membership is $25. **AAW-D**, 667 Harriet Ave., Shoreview, MN 55126. 612-484-9094.

☐ Are you looking for a unique do-it-yourself project? Are you tired of incomplete, hard to understand instructions? Look no further. Build a beautiful Cedar Strip Canoe following our complete instructional video. All you need are simple tools, 60 - 80 hours and basic woodworking experience. Call or write for information. **PALEO CANOE COMPANY**, P.O., Box 491, Bedford, MA 01730. 617-275-3004.

☐ Now! Choose from circular or bandsaw models! The Sawmill goes right to the trees and turns out smooth, true-cut lumber — even beginners get excellent results. Just one man (no crew needed) can easily cut enough on weekends to save hundreds of dollars over high lumberyard prices. Phone toll free 1-800-942-4406. Ext TW9. **TIMBERKING, INC.** Dept. TW9, 1431 N. Topping., Kansas City, MO 64120.

☐ Here's a complete antique picture frame restoration kit, including training manual and video, that show you how to capture big profits fixing frames. Frame-Kit is a great add-on business or part-time opportunity. Complete furniture restoration catalog: $2. Free workshops, **MINUTEMAN, INC., Dept. 17**, 115 N. Monroe, Waterloo, WI 53594. 1-800-733-1776.

DRAW & SAW

☐ Quick & easy new method of tracing & upscaling patterns with adhesive film imprinted with 1/4-1" grid lines. No more messy glues, expensive enlargments or pattern shifting; leaves no residue or pattern lines. Draw & Saw adheres to all woods, accepts pen, pencil or print directly on it through a copier machine. Great with scroll, jig or band saws. Saves time & eliminates extra tracing. Send $1 for 9x12" sample & product information. **GRAHIC ARTS SYSTEMS**, 19499 Miles Rd., Cleveland, OH 44128. 216-581-9050.

☐ 30 lbs. of assorted hardwoods. Excellent for small crafts and toys. Random species and thicknesses. All surfaced 2 sides, 1/2" – 2" thick, 3" – 10" wide and 6" – 24" long. Shipped UPS prepaid, $29.95.
STEVE H. WALL LUMBER CO., Rt. 1, Box 287, Mayodan, NC 27027. 1-800-633-4062 or 919-427-0637.

☐ If you thought a brad nailer was a shop luxury, think again. Grizzly brings professional-quality tools within the reach of the home shop woodworker with this incredible brad nailer. Install moulding, door frames and casing the professional way — with professional results. Nailer accepts up to 1-3/16" brads. Complete with instruction manual. **GRIZZLY IMPORTS, INC.** Call 800-541-5537 West of the Mississippi and 800-523-4777 East of the Mississippi. Model G1852, only $99.95.

☐ Porter Cable #9690 1-1/2 HP router with genuine Porter Cable steel carrying case. Heavy duty motor with high torque power. New self-releasing collet system. Micrometer depth of cut control. This best selling router complete with case makes an ideal Father's Day gift. List price $305. Yours for $149 from **TOOLS ON SALE™**, 216 West 7th St., St. Paul, MN 55102. Call toll free 1-800-328-0457.

☐ America's most unique carving machine. Now you can duplicate 3 dimensional patterns with extreme accuracy using Roto Carve and your table saw. Many shapes from round to square or tapered, without time consuming set-up changes. Furniture restoration or reproduction, gun stocks, decoys, lamp bases are a few of the items produced on the Roto Carve. Free brochure. Call 319-987-2511 or write **ROTO CARVE**, 2754 Garden Ave., Janesville, IA 50647.

"Jorgensen"
E-Z HOLD® #3600

☐ Jorgensen E-Z Hold Clamps come in sizes; 6", 12", 18", 24", 30", and 36". These clamps offer the best single-handed clamp available today. Made of durable steel construction, with superior speed, design and applied force . . . out performing other one-handed clamps. E-Z Hold the newest idea from the oldest name in quality clamps. Also available in Jorgensen E-Z Hold Adaptor Kits. Write: **The Adjustable Clamp Company**, 410 N. Ashland, Chicago, IL 60622.

☐ 10 pc. General Purpose Router Bit Sets. These sets include our most popular industrial quality router bits. All bits are carbide tipped and packaged in a beautiful wooden case. Best of all, you can take advantage of big savings over individual pricing. To order yours, call **CASCADE TOOLS, INC.** at 1-800-235-0272 or write to P.O. Box 3110, Bellingham, WA 98227. C1638 General Purpose Set-1/4" Shanks, Only $94.95, C1639 General Purpose Set-1/2" Shanks, Only $94.95.

☐ Beat "cam-out" with the incredible square drive screw. "Do-it yourself dozen" assortment includes 1200 screws, 3 driver bits and 12 storage bins for just $59.95 + $6.75 S&H (48 States only) Save over $13.00! Catalog $1, free with order. **MCFEELY'S**, P.O. Box 3, Lynchburg, VA 24505. 1-800-443-7937.

☐ Variable feed rate planers, drum sanders and stoke sanders from Woodmaster Tools. Free information on 12", 18" and 25" planers . . . 26" and 38" drum sanders. Facts on 30-day free trial. Free information kit. Call 1-800-821-6551 ext. PW62. **WOODMASTER TOOLS**, Dept. PW62, 1431 N. Topping, Kansas City, MO 64120.

☐ NEW! For all computer users. F-1™ Organizer/ Reference Pad. Mounts on left or right side. Reinforced pages and tabs flip over for fast retrieval of information. Sturdy aluminum construction. A breakthrough accessory that fills a real need. Only $19.95 delivered. **HUSCO ENGINEERING COMPANY**, 17 Calvin Rd., Wilton, CT 06897. Call 800-752-3181. V/MC/DISC.

☐ The "affordable portable" one man band sawmill. Weighs only 45 lbs. Cuts 20" diameters logs into lumber. Minimum 1/8" to maximum 9" thickness. Write or call for free brochure. Videos available. **BETTER BUILT CORPORATION**, 845 Woburn Street, Dept. W, Wilmington, MA 01887. 508-657-5636. MC/VISA and Discover accepted.

☐ Here's a gift that keeps on giving! **GLASS PATTERNS QUARTERLY** magazine shows you how to create authentic stained glass projects to complement your woodworking. Each issue of GPQ features more than a dozen projects, full-size patterns, step-by-step instructions, how-to photos, and more. To subscribe send $18 (one year) or $32 (two years) to **GPQ**, P.O. Box 131, 8300 Hidden Valley Rd., Westport, KY 40077. Visa/ MasterCard holders, call 502-222-5631 or fax 502-222-4527. Outside U.S., please add $5. Satisfaction Guaranteed.

☐ Create an heirloom for your progenitors! Our "Bear-ris Wheel" features a wind-up music box that plays "Love Makes the World Go 'Round" and small bears enjoying the ride as it turns. #04579Z Plans and Parts $18.50 plus $4 processing charge. Kit includes all needed parts — no lumber. Catalog $1, free with order. Orders only: 800-999-3445. **CRAFTER'S MART**, P.O. Box 2342-FW, Greeley, CO 80632.

☐ Super Binder stops cord hassle. Strong nylon loop attaches to item. Wrap 2 ply Velcro® strap around coil either way to secure. Pull thumb tab to release. Weatherproof. Durable. Call or write for information. **MEGAMARK PRODUCTS CO.**, 9 Jerome St., Medford, MA 02155. 1-800-543-5904.

60950WE

makita

FREE EXTRA BATTERY!

☐ Special Edition Kit 9.6V Cordless Driver Drill with Keyless Chuck, Universal Charger, Case, & Two Batteries! List $290. Sale $139. Free Battery! Complete Line at the Right Price! 1-800-262-5482. That's 1-800-2-MAKITA.

HOME LUMBER CO.
449 WHITEWATER ST., WHITEWATER, WI 53190

☐ Laguna Tools 18" band saw, 2 HP motor, top and bottom guides. 11" resaw capacity. Heavy duty machine with cast iron table and wheels. Blade from 1/8" to 1" width. Tilt table. Rack and pinion on upper blade guard. Foot brake. Very smooth and quiet. Call 1-800-234-1976 for more information. **LAGUNA TOOLS**, 2081 Laguna Canyon Rd., Laguna Beach, CA 92651.

☐ Amazon's premium finishing oils. These are the finest, enviro-friendly oils available (since 1978). Golden teak oil, mahogany oil, oakwood oil, pure tung oil, Danish oil, cedar and lemon oils. Sold and used worldwide in fine furniture finishing as well as toys. All imported and refined oils formulated for all projects. For catalog send $1 to **AMAZON PRODUCTS**, Dept. BH, P.O. Box 530156, Miami Shores, FL 33153. 1-800-858-5645.

☐ Be a Home Inspector. Train at home for a money-making career in this fast-growing field. Start your own business. For more details see our ad in this issue or write **SCHOOL OF PROPERTY MANAGEMENT**, Dept. A8DE43S, 925 Oak St., Scranton, PA 18515.

☐ The Ryobi Detail Sander reaches into tight spots to virtually eliminate finger sanding. Sanding angles come in various grits. Options include scraper blade to remove paint from glass, metal finishing pad to remove rust, and wax/buffing pad. Also available: stripping pad and finishing pad. See your **RYOBI** dealer or call 1-800-525-2579.

☐ Faster than traditional mallet & chisel. Hand-Craft carving tool chisels wood at up to 10,000 VPM. Professional quality; perfect for hobbyist and journeyman carver. Safe, lightweight, easy-to-use. Pressure controls carving speed, depth. Includes hardened steel cutting blades. Operates on household current. Starts at $314.00. Visa & Mastercard accepted. **SUGINO CORP.**, 1700 Penny Lane, Schaumburg, IL 60173. 708-397-9401.

CARBIDE TIPPED 1/4" SHANK ROUTER BIT SETS

☐ "Must Have" Carbide Tipped Router Bit Set includes most desired bits used by all woodworkers. Set makes a special gift. 8-piece set includes: 3/8" round over bit, 1/4" straight bit, 1/2" straight bit, 1/2" flush trim bit, 3/8" key hole bit, and 1/2" 14° dovetail bit. Exceptional quality and value. $69.95 for set. **MLCS LTD.**, P.O. Box 4053D, Rydal, PA 19046. Call toll free 800-533-9298.

☐ NEW! Craft & Woodworking Catalog. Top-quality tools & accessories for your shop. Includes complete information & prices on HEGNER Precision Scroll Saws, blades, & accessories for other scroll saws, HEGNER Lathes & Duplicators, HEGNER Accura Precision combination machine, PLANO Vertical Glue Press, FELDER Woodworking Sytems, bar clamps & more. Free catalog. Call 302-322-2226. **ADVANCED MACHINERY IMPORTS**, P.O. Box 312, Dept. 549, New Castle, DE 19720.

BOULTER PLYWOOD

One Stop Wood Shop

☐ Hardwood plywood, 30 species in stock (exotics made to order). Hardwood lumber and marine plywood all under one roof. Custom cutting services to your exact specifications with little or no waste and at competitive prices! And, we specialize in handling and shipping. Call 617-666-1340 today for catalog and quotations. **BOULTER PLYWOOD CORP.**, 24-GL Broadway, Somerville, MA 02145.

RIP SAW

The Portable Sawmill.

The "affordable portable" one man band sawmill. Weighs only 45 lbs. Cuts 20" diameter logs into lumber. Minimum 1/8" to maximum 9" thickness.

Write or call for free brochure.

Videos also available.

Better Built CORPORATION

(508) 657-5636

845 Woburn Street, Dept W, Wilmington, MA 01887

MasterCard VISA DISCOVER

WARREN'S FINEST COMBINATION WHITTLERS/CARVERS KIT IN CUSTOM REDWOOD BOX

1993 WOOD SHOP SPECIAL *COMBI-TCE

$89.95

P.Pd. (USA)

CONTENTS:
(8) Gouges*
(6) Small Blades*
(1) Large Blade*
*All Honed Sharp
(2) Handles (Interchangeable)
(1) ea. Walnut (Palm), and Rosewood
(2) Sharpening Blocks
(1) ea. Abrasive, and Leather,

1993 Warren Woodcarving Tool & Supply Catalog FREE WITH ORDER. Catalog only, send $1.00. *N.Y. State Residents Add State Tax.

Designed for wood-carvers who appreciate fine quality tools. (Made in USA) Est. 1927.

Plus Free Pattern and Instruction Booklet

Send Check or Money Order to:

Warren Tool Co., Inc.

2209-1 Rt. 9G, Rhinebeck, NY 12572

Tel. (914) 876-7617 • VISA only • COD 1993 Available

Canada and Foreign Please send Money Order Canada Add $3.00. Foreign Orders Add $5.00 Shipping Fee

THE GIZZMO FACTORY

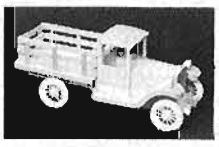
BIRDHOUSE PLANS

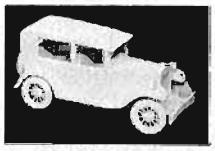
- Intermediate skill level.
- Detailed cutting and assembly drawings.
- Step by step instructions with photos.
- Note: These birdhouses are fairly large and are designed to be mounted atop a 4x4 post.
- When ordering please specify: 1) The Castle
- Plans $12.50 each or 2) The Church
- all 3 for just $30.00 plus $2.50 s&h 3) The Airplane Hanger

Washington residents add 8.2% sales tax

PO Box 70162 Seattle, WA 98107 1-800-580-3847

WOOD TOY





- ★ Patterns
- ★ Parts
- ★ Wheels
- ★ Many New Patterns to Choose from.
- ★ Executive toys

SEND $1.00 FOR NEW CATALOG & RECEIVE COUPON FOR FREE WHEELS & AXLE PEGS.

toys and joys

Box 628W Lynden, Wash. 98264

HERITAGE Building Specialties

PROJECT-PAK®
A WOODWORKERS DREAM COME TRUE!

- Save money on projects
- Reduce waste by 25-50%
- Eliminate layout headaches

The ONLY way to buy wood!

Call for details & catalog today.

1-800-524-4184

205 N. Cascade • Fergus Falls, MN 56537

WE WORK FOR YOU!

Garrett Wade Company — The Yankee Wood Craftsman

Garrett Wade
161 Avenue of the Americas
New York, NY 10013
(800) 221-2942

Woodworking Tool Catalog: 232 pages of tools from the USA and around the world: measuring tools, planes, saws, chisels, carving tools, power tool supplies, workbenches, finishing supplies and books – plus hundreds of tips on selecting, using, and maintaining the tools that will serve you best. $4.00

24 Page Sampler Catalog Free

Classic Hardware Catalog: 48 pages of the finest brass furniture hardware: handles, knobs, hinges, latches, locks, and casters. $3.00

if you can plug it in...we've got it!

GREAT BARGAINS ON ALL YOUR FAVORITE TOOLS

BIESEMEYER

T50	50" Commercial Fence	$294
HS52	52" Home Shop	235
HS40	40" Home Shop	222

SENCO NAIL GUNS

not available in all areas

LS2	Pinner 5/8" - 1"	$ 209
SFN1	1"-2" Finish Nailer	255
SFN2	Big Finish Nailer	375
SXS	1/4" Crown Stapler	247

SLP 20 Pinner $249

shoots up to 1-5/8"

Emglo AM78HC4V 1 1/2 HP 2 tank $299

AEG

EY102	4" Plane	$79
ST8E380	Jig Saw	69
VS280	1/2 sheet sander	49

EZ1320 Screwdriver Kit - 2 batteries $89

The Kreg Jig

Pockethole maker for joining faceframes, butt joints and other pocket hole applications

K2	two hole	$99.95
K1	one hole	89.95
Kjr.	pocket model	34.95
Face Clamp		15.95
Replacement Drill Bit		15.95
Square Drive Driver Bit 1"		1.95
Square Drive Driver Bit 3"		2.95

Self Taping Square Drive Screws
1- 1/2 or 1 -1/4 100/bag 2.59

Makita

LS1030 10" Miter Saw $189

BO4510	Square Pad Sander	$ 49
BO4530	Round Pad Sander	59
BO5000	Rand. Orbit Sander	85
6404	3/8" VSR Drill	57

SKIL

1805-2	Biscuit Joiner	$ 118
2735-08	12V Cordless-2 batt	129
5510	5 1/2" Trim Saw	109
77		$139

7 1/4" Wormdrive Saw

Panasonic

EY571B 9v Cordless Drill $127

EY571BC	with case	$ 139
EY970B	9.6v battery	39

TRI-GRIP

Clamp 'n Tool Guide		Back-to-Back Bench Clamp	
50C	$ 28.50	BB50	$ 44.95
36C	25.50	BB36	36.95
24C	21.50	BB18	30.95

HC ROLLER STANDS

HPR2 $39.95 HPR 13 $29.95

Milwaukee

0234-1 1/2" Magnum $118

0222-1	3/8" Drill	$ 105
0224-1	3/8" Magnum	114
0375-1	3/8" RA Drill	127
0379-1	1/2" RA Drill	145
3300-1	RA Magnum	183
5392-1	3/8" Hammer Drill	114
6368	7 1/4" Circsaw Kit	134
6527	VS Super Sawzall	164
6528	VS Super Sawzall	164
6546-1	2 spd. Cordless Screwdriver	78
6583-1	HD ScrewShooter	145
6747-1	Drywall gun 0-2500	100
8977	Variable Heat Gun	74

6508 $132

2 range VS Sawzall

HITACHI

C10FA	10" Miter Saw	$ 269
C7BD	7 1/4" circular Saw	125
CJ65VA	Orbital Jigsaw Kit	149
F20A	Plane	89
M12V	3 1/4hp Plunge Rtr	223
TR12	Plunge Router	168

HAIL GUNS

NR83A	Framing Gun	398
NT45A	18 g Finish Nailer	279
NT65A	16 g Finish Nailer	319
N5008AA	1/4" crownStapler	319

C8FB $459 Compound Miter Sawzall

Clamp for C8FB $18.95
Small Piece Fence 12.95

PORTER-CABLE

330 Palm Sander $55

100	7/8 hp Router	$ 95
315-1	7 1/4" Circular Saw	116
332	NEW! R.O. SANDER	86
333	R.O SANDER w/bag	76
334	R.O SANDER w/bag	76
351	3x21 Belt Sander	134
352	3x21 Belt Sander w/bag	138
360	3x24 Belt Sander w/bag	178
361	3x24 Belt Sander	169
362	4x24 Belt Sander w/bag	187
363	4x24 Belt Sander	182
505	1/2 Sheet Sander	118
513	Lock Mortiser	679
550	NEW! Pocket Cutter	207
59381	Door Hinge Kit	165
690	1-1/2 hp Router	132
693	Plunge Router	184
6931	Plunge Base	74
659	Drywall Screwgun	79
696	Router Table	122
7310	Trim Router	84
7336	6" R.O. Sander	134
9118	Door Plane Kit	196
9345	6" SawBoss Kit	122
97310	Trimmer kit	187
98538	12V Cordless-2 batt	174

freud

94-100 5pc $157

Router Bit Cabinet Set

FT2000E Vs Plunge router $ 285

Professional Carbide-Tipped Blades

LU85M010	10" 80T Finish	57
LU84M011	10" 50T Combo	39
LM72M010	10" 24T Rip	37
LU85M015	15" 108T Finish	165

RYOBI

AP12	NEW! 12" Planer	425
BE321	3x21 Sander	128
BT3000	10" Pro Table Saw	544
BT3000W	With Stand	599
JP155	6" Planer	295
JM100K	Biscuit Jointer	204
JS045	Jig Saw	85
R501	2hp Plunge Router	148
RE600	3hp Plunge Router	204
RS112	Random Orbit Sander	52
SC180	Scroll Saw	136
TFD222	12v Cordless Drill 2 batt.	184
TS260	NEW! 10" Comp. Miter	229

NEW! Fine Detail Sander DS1000 $49

DS1000 SANDPAPER
40,60,80,100, 150 Grit, Assorted 10 pieces.....$3.25

HOOK & LOOP SANDPAPER

RYOBI	4 1/2" discs	10 count
PORTERCABLE	5" discs	10 count
BOSCH	5" discs	10 count
MAKITA	5" discs	10 count

All GRITS,10pc.$4.95

STIKIT SANDPAPER 10 yards

Grit	4 1/2" roll	pieces, 6" round	5" round
80	10.95	100 pc	18.95 13.95
100	9.85	50 pc	11.65 8.50
120	9.85	50 pc	11.65 8.50
150	9.85	50 pc	11.65 8.50
180	9.85	50 pc	11.65 8.50
220	9.85	50 pc	11.65 8.50

CONSTRUCTION MASTER III

The world best feet-inch-metric-fraction calculator. Solve rafters, hips,valleys, stairs

$ 69.95

BOSCH

1194VSR	1/2" Hammer Drill	$ 138
11212VSR	SDS Roto Hammer	194
1615EVS	3 hp Plunge Router	257
1604	1 3/4 hp Router	132
1609K	3-base Trimmer kit	164
3293DVS	5" R.O.Sander	95
3051VSRK	With 2 batteries	139

1581VS $135 VS Orbital Jigsaw

BOSCH JIGSAW BLADES 5/pkg

MOD	Len	Th	Application	Cost
T101A	4	14	aluminum	9.95
T101AO	3	20	Scrolling	4.25
T101B	4	10	clean cuts wood	5.95
T101BR	4	10	Reverse tooth	5.95
T101D	4	6	fine cuts wood	5.95
T111C	4	8	medium cut	3.75
T118A	3	34	metal <1/8"	4.95
T118AF	3	24	metal <1/8"	7.95
T118B	3	14	metal <1/4"	4.95
T118BF	3	14	metal <1/4"	7.95
T119A	3	24	fine cuts wood	2.95
T119B	3	12	medium cuts	3.75
T119BO	3	12	Scroll blade	5.25
T127DF	4	8	aluminum <1/4"	8.75
T144DF	4	6	Fast,rough cuts	9.45
T244D	4	6	Fast scrolling	6.75
T500	MIXED ASSORTMENT			5.25

SMARTLEVEL

SL224	2' Level w/sensor	$ 54
PR249	2' Pro Level w/module	87
PR48S	4' Pro Level w/module	104
SMA	Smart Module only	79
PR24	2' Pro Rail only	19
PR48	4' Pro Rail only	36

STABILA

LEVELS - Hand holes. Two vertical vials. Two milled faces. Yellow coat.

2464	24"	$ 36
2469	36"	39
2467	48"	45
2501	10" POCKET LEVEL	24

USE VISA, MC, DISCOVER

FREE SHIPPING on orders over $50. Within continental 48 states. HI and AK extra. Sales limited to stock on hand.

ABBEY TOOLS
1-800-225-6321

1132 N. MAGNOLIA, ANAHEIM CA. 92801
OPEN 8-5:30 WEEKDAYS 9-2 SATURDAY
Calif. residents add 7.75% state sales tax
SERVING YOU FOR OVER 15 YEARS
Prices subject to change without notice

Print this article

DELMHORST MODEL J-88
WOOD MOISTURE METER
INSURE THE QUALITY OF EVERY PROJECT
VALUE PRICED AT $110

Easy to read LED Display indicates 10 ranges of Moisture Content between 6% and 20%. • 3yr. warranty • Complete with carrying case, batteries, and pins. • Delmhorst offers over 45 years of experience and service second to none!
CALL TOLL-FREE: (800) 222-0638
NEW JERSEY: (201) 334-2567

DELMHORST
INSTRUMENT CO.
51 Indian Lane East, Dept. 931, Towaco, NJ 07082

RESTORE FURNITURE for SECURE INCOME
Perfect 2nd Career
Make $200-$2,000 a day! Unlimited market; turn-key business. Free workshops. Set-Up Shop for $2,999-$9,999! Part-time or full-time. Great for men, women, families.
Make Molds*Veneer*Resilver
Strip*Repair*Refinish
Business Preview Video $19.95 - Catalog $2.00
MINUTEMAN, INC., Ste. 17
Box 8, Waterloo, WI 53594
1-800-733-1776

WIN A FREE HEGNER SCROLL SAW
After fifteen years of leadership, HEGNER Precision Saws are still the #1 choice! Now you can win a HEGNER... absolutely FREE! We will also send you our catalog, at no cost or obligation. Call or write today!
1•302•322•2226
ADVANCED MACHINERY IMPORTS, LTD.
P.O. Box 312, Dept. 549 New Castle, DE 19720

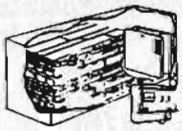
SAFE • EASY • PRECISE PROFESSIONAL WOOD CARVING

AUTO MACH by Sugino
Compact. 10,000 vpm oscillating speed. Pressure activated. Operates on ordinary household current. Send for free brochure. Dealers inquiries invited
$314.00
Visa & Mastercard accepted.
Sugino Corp.
1700 N. Penny Lane
Schaumburg, IL 60173
(708) 397-9401

TracTop®
ARMRESTS
#1 WORLDWIDE SINCE 1980!

EXCLUSIVE SLIDING CUSHION WITH PULL-OUT TRAY
COMFORT • LOOKS CONVENIENCE
Color Choices Install Yourself Return Guarantee
HONDA • ACURA • BMW • AUDI
NISSAN • SAAB • VW • VOLVO
New! FORD Escort & GEO Storm
Other models Free Literature V/MC/DISC
HUSCO 1-800-752-3181
ENGINEERING CO., INC.
17 CALVIN ROAD WILTON, CONNECTICUT 06897

DRY YOUR OWN LUMBER...

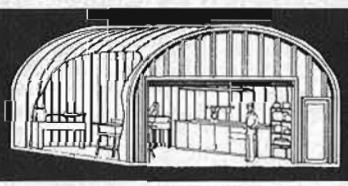


...With an EBAC Wood Drying System
• 3 MODELS UNDER $3000
• RUNNING COSTS ABOUT 3¢-5¢ PER BF
If you thought you couldn't afford your own dry kiln — NOW YOU CAN!
CALL TODAY 1-800-433-9011
EBAC LUMBER DRYERS
106 John Jefferson Rd., Suite 102
Williamsburg, VA 23185
1-800-433-9011 • FAX (804) 229-3321
in Canada: 416-985-2123 • FAX (416) 985-3708

OVER 1000 WOODCRAFT PATTERNS
Full Size • Fun • Profitable • Fast Service • Guaranteed
Start now! Pick from these favorites or send $2 for catalog (free w/order)
- ☐ Attractive "Dutch Windmill" - 5 feet tall including blades.
- ☐ Create Great Gifts - over 40 projects for fun and profit.
- ☐ 100 yard ornaments - birds, butterflies, signs, more.
- ☐ Make 14 helpful projects for Great Vegetable Gardens.
- ☐ Country Critters - 100 patterns, decorative projects!
- ☐ Yard Characters - Dutch, Amish, bending lady, more.
- ☐ 125 pattern Fun Packet PLUS "Shop Secrets".
- ☐ 25 "wind-action" Whirligigs - fun to make and watch.
- ☐ Over 20 quick and easy birdhouses.
- ☐ Top-selling "Show-Stoppers" - 22 craft fair favorites.
- ☐ Attractive Park Bench converts to Picnic Table!
- ☐ Yard Bonanza - arbor, trellises, arches, fences, more!

Send $8.00 per packet • Pick 3 for only $18.00
Order By Mail or Fax • MC/Visa • 24 Hour Fax (603) 332-4579
ACCENTS, Dept. MA53, Box 7387, Gonic, NH 03839

SOLVE YOUR STORAGE PROBLEMS



SAVE Up To 40%
Build It Yourself
16x32 25x40
30x48 60x140
STEELMASTER
800-888-4606

PRODUCTS THAT PERFORM

SHOP TESTED

A spreader clamp that's easy to use

In the past, whenever I needed a spreader clamp, I would turn around the jaws on a ½" pipe clamp. Now, I've found a product that's faster, easier, and can't mar the surfaces of my project.

The new Quick-Grip spreader works like the manufacturer's line of other Quick-Grip clamps. You can quickly adjust the movable jaw with one hand by repeatedly squeezing its handle. With this tool, though, the manufacturer, American Tool, has turned the jaws around so you can spread objects in a range from 7¼" (with the jaws together) to 27½" (jaws fully extended).

So far, I've used the product mostly for disassembly of antique furniture. I've also used it in conjunction with normal clamps to help me position face-frame partitions. Because of its soft, plastic pads, I don't have to put small blocks of wood between the clamp's jaws and my workpieces to prevent marring.

—Tested by Chuck Hedlund

Quick-Grip spreader clamp by American Tool Companies, about $25 through woodworking catalogs or at hardware stores nationwide. For more information, call American Tool Companies at 402/683-2315.

Continued on page 78

BRANDING IRON

For hard and soft wood

$29.00

Plus $3.00 for shipping and handling

Nebr. residents add correct sales tax

SATISFACTION GUARANTEED or your money back

- Shipped in one week
- Solid brass head — raised letters
- 1st Line: HAND CRAFTED BY — as above
- 2nd Line: Your choice — 20 characters/spaces max
- Electric unit available for $49.00 + $3.00

CALL TOLL FREE . . .

1-800-826-7606

Order by mail from: **NOVA TOOL CO.**

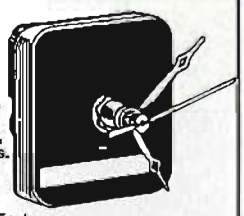
Free brochure available

12500 Finigan Rd., Dept. B9
P.O. Box 29341, Lincoln, NE 68529

VISA MasterCard Discover

CLOCK MOVEMENTS

Prices Good Thru 6/30/93



Quartz movements are 2-1/8" sq. x 1/2". Accurate to 15 seconds per month. Operates on AA battery (not included). Comes complete with mounting hardware, hour, minute and second hands.

#61002 5/16" Shaft
#61003 9/16" Shaft
#61006 13/16" Shaft

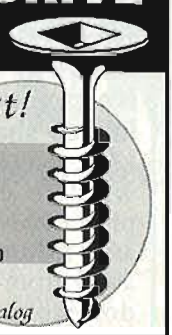
4.26/Each, 5-9: 3.76/Each, 10-24: 3.50/Each, 25 or more: 3.00/Each

CRAFTER'S MART

P.O. BOX 2342-W • GREELEY, CO 80632

72-Page CATALOG: $1, Free with any order. Check, MasterCard or VISA (include daytime phone, card no., exp. date & signature). PROCESSING CHARGE: Continental U.S. $4; AK, HI, APO/FPO $10; Canada $16; Foreign 20% plus $10 (U.S. Funds). CO Res. add 3% tax. Info: (303) 351-0676 PHONE ORDERS: 8am-5pm Monday-Friday, **1 - 800 - 999-3445**

SQUARE DRIVE SCREWS



Simply the Best!

- Square Drive Beats Driver Slippage
- Hardened Steel for Extra Strength
- Deep Thread for Super Grip
- Also Brass and Stainless

Send $3 for Samples and Catalog

McFEELY'S SQUARE DRIVE SCREWS

P.O. Box 3 • 712 12th St
Lynchburg • Va • 24505
Toll Free 1-800-443-7937
or FAX (804) 847-7136

INTERESTED IN WOODTURNING?

Join the American Association of Woodturners!

- Quarterly Journal-*American Woodturner*
- National Symposiums
- 55 Local chapters

THE AMERICAN ASSOCIATION OF WOODTURNERS 19 88

call or write:
AAW - Dept. W
667 Harriet Ave.
Shoreview, MN 55126
612/484-9094

PALEO™ CANOE COMPANY

BUILD YOUR OWN CEDAR STRIP CANOE

★ 2½ HR STEP-BY-STEP VIDEO INCLUDES FREE FORM TEMPLATES AND ALL THE KNOW HOW TO GUIDE YOU FROM BEGINNING TO END. $39.95 plus $3.00 S&H.

★ DO-IT-YOURSELF KITS INCLUDE ALL MATERIALS NEEDED TO BUILD A 14' OR 16' CANOE PLUS OUR STEP-BY-STEP VIDEO.

FOR MORE INFO & PRICES CALL OR WRITE

PALEO CANOE CO., P.O. BOX 491
BEDFORD, MA 01730, (617) 275-3004

OCTAGON PICNIC TABLE

Plans $16.75

Designed to last with bolted construction, having no exposed hardware. Walk through seating for eight people and accepts umbrella. Easy to follow plans, instruction sheet and step by step pictorial.

29" h x 77" w x 85" l Color Catalog $2.00 FREE with order.

Specialty Furniture Designs Of Michigan
797 W. Remus Rd., Dept. W-17 Mt. Pleasant, MI 48858
Visa/MC accepted (517) 772-6292 MI add 4%

TRANSPOWER

FOR EXPRESS NEW CATALOGUE CALL
1-800-654-7702

SUPER HEAVY DUTY WOODWORKING EQUIPMENTS

200HD	10" SUPER HEAVY DUTY TABLE SAW, 3HP	$940
200HA	10" SUPER HEAVY DUTY TABLE SAW, 3HP	$740
MS250	10" TABLE SAW, 1½HP	$345
SB800	20" BAND SAW, 3HP	$1290
SB700	18" BAND SAW, 2HP	$625
SB600	16" BAND SAW, 1½HP	$475
SB500	14" BAND SAW, 1HP	$250
AP200A	20" AUTO PLANER, 2 SPEEDS, 3HP	$1275
AP300	24" AUTO PLANER, 3 SPEEDS, 7HP	$2590
AP650	15"X6" AUTO PLANER, 2 SPEEDS, 2HP	$695
AP600	16"X6" AUTO PLANER, 2 SPEEDS, 3HP	$740
AP150	12"X6" AUTO PLANER, 2HP	$345
SP900	TILTING SPINDLE SHAPER, ½" & ¾", 3HP	$1250
HP500L	3HP SHAPER, 1" ½" ¾" SPINDLES	$795
HP500	3HP SHAPER, 1" ½" ¾" SPINDLES	$740
DH150	1½HP SHAPER, ½" ¾" SPINDLES	$398
JT650	6" LONG BED JOINTER, 1HP	$925
JTS60	8" HEAVY DUTY JOINTER, 1½HP	$650
1200	12" HEAVY DUTY JOINTER, 3HP	$1695
747	DUST COLLECTOR, 650 CFM, 1HP	$175
2000	DUST COLLECTOR, 1250 CFM, 2HP	$294
3000	DUST COLLECTOR, 1850 CFM, 3HP	$345
RF150	AUTO FEEDER, ½HP	$385
RF250	AUTO FEEDER, 1HP	$640
SD800	90° EDGE SANDER, 2HP	$420
SD1200	123° EDGE SANDER, 2HP	$980
DS600	AIR DRUM SANDER, 1 HP	$285
	..... AND MORE.	

C.P. Tools, Inc. • 14257 E. Don Julian Rd., Industry, Ca. 91746 818-333-7701

Econ-Abrasives

WE MAKE ABRASIVE BELTS ANY SIZE, ANY GRIT!

Standard Abrasive Sheets

CABINET PAPER

	50/pk	100/pk
60D	$15.00	$27.00C
80D	14.00	25.00C
100 thru 150C	13.00	23.00C

FINISHING PAPER

80A	$ 10.00	$17.00C
100 thru 280A	9.00	15.00C

NO LOAD PAPER(white)

100 thru 400A $11.00 $19.00C

"C" = 100 SHEETS

Velcro® Vacuum Discs

8 Hole pattern for Bosch sanders

Dia.	Grit	Price
5"	60	$ .48ea
5"	80	.46
5"	100 thru 320	.45

* OTHER PRODUCTS *

*Wide Belts*Rolls*Flap Wheels *Pump Sleeves*PSA Discs *Router & Wood Bits*Wood Glue

ABRASIVE BELTS

PLEASE SPECIFY GRITS

1X30	$ .73 ea	3X24	$ .84ea
1X42	.73 ea	3X27	.87 ea
1X44	.73 ea	4X21 3/4	.96ea
2 1/2X16	.77 ea	4X24	.99ea
3X18	.78 ea	4X36	1.20ea
3X21	.81 ea	6X48	3.14ea
3X23 3/4	.84 ea	2 1/4X80	2.94ea

OTHER SIZES ON REQUEST

HEAVY DUTY SPRING CLAMPS

Clamps come w/PVC tips and grips.

Size	Price
4"	$1.75 ea
6"	2.25
8"	3.50

JUMBO ROUTER PAD(24" x 36")

It will not allow small blocks of wood to slip out under router or sanding applications. ROUTER PAD ONLY $8.95ea.

JUMBO BELT CLEANING STICK ONLY $8.80

*MasterCard, VISA, C.O.D. or Check
*SATISFACTION GUARANTEED!!!
*CALL FOR *FREE* CATALOG
- TX & NV add appropriate sales tax
- Continental U. S. shipping add $5.50

Econ-Abrasives
P. O. Box B865021
Plano, TX 75086
(214)377-9779

TOLL-FREE ORDERING LINE (800) 367-4101

PRODUCTS THAT PERFORM

SHOP TESTED

Continued from page 76

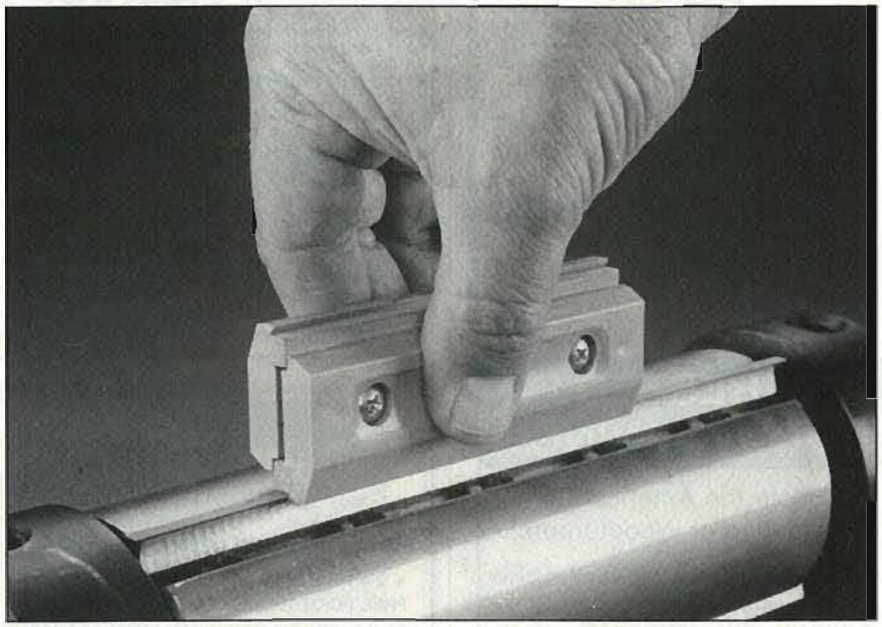
Keep your jointer and planer knives sharper longer

Let's face it: Few of us look forward to changing jointer and planer knives. It's time-consuming and tedious work that keeps us away from what we really like to do—work wood! Well, here's a product that helps postpone knife changes for as long as possible.

With the Hone-Mate, you hone knife edges without removing the knives from the machine. You simply dip the Hone-Mate in oil, and then give the knife edges a few strokes with each of the 180- and 400-grit stones contained in the Hone-Mate. The stones automatically index against the knife edge for perfect results every time.

I've made a practice of honing the knives in my planer and jointer at least once a week with this little sharpener. As a result, I'm rewarded with better cuts and I remove the knives from the machine only when they become nicked and require grinding.

—Tested by Bob McFarlin



Hone-Mate knife hone and holder, item 95-240, $27.50 ppd. from Woodworker's Supply. Call 800/645-9292.

Continued on page 80

SERIOUS POWER TOOLS

WE PAY ALL SHIPPING CHARGES ON TOOLS SHIPPED WITHIN THE CONTINENTAL U.S.A. and ACCESSORY ORDERS OVER $50.00!!!

BLACK&DECKER

3/8" VSR Cordless ScruDrill Kit With Free Second Battery*
Model 2765K
Mfg. Sug. Price: $298.00
TDT Price: $179.00

4 1/2" Angle Grinder
Model 2750
Mfg. Sug. Price: $151.00
TDT Price: $84.00

Model	Description	List	TDT
2584	7 1/4" Circular Saw 13 amp with free case*	$275	$145
1186	3/8" VSR Drill 4 amp motor	$116	$64
1357	3/8" VSR Drill 4 amp motor	$121	$68
2600	3/8" VSR Drill 4.5 amp motor	$161	$85
2684K	Cordless ScruDrill Kit with case, 9.6 Volt	$262	$147
2665K	Cordless ScruDrill Kit with case, 12 volt	$282	$159
5073	1/2" Hammer Drill Kit with case, 5 amp	$300	$164
2670	1/2" Impact Wrench 7.5 amp motor	$271	$139

Milwaukee

Heavy Duty Magnum Hole-Shooter
Model 0234-1
Mfg. Sug. Price: $219.00
TDT Price: $124.00

Heavy Duty Cordless Screwdriver
Model 6539-1
Mfg. Sug. Price: $125.00
TDT Price: $74.00

Model	Description	List	TDT
0238-1	3/8" VSR Drill 3.5 amp motor	$179	$102
6145	4 1/2" Angle Grinder Max. 10,000 RPM	$159	$94
6527	Super Sawzall Kit VS with case, 8 amp	$299	$168
6507	Sawzall Kit VS with case, 4 amp	$249	$134
6385	7 1/4" Circular Saw 13 amp motor	$209	$120
5397	3/8" Hammer Drill Kit VSR, 5 amp motor	$239	$139
6753-1	Drywall Screwdriver VSR, 3.5 amp motor	$144	$85
0235-1	1/2" VSR Hole-Shooter keyless chuck, 5.2 amp	$223	$129

PORTER•CABLE

7 1/4" Top Handle Circular Saw
Model 315-1
Mfg. Sug. Price: $220.00
TDT Price: $117.00

7/8 Horsepower Router
Model 100
Mfg. Sug. Price: $185.00
TDT Price: $103.00

Model	Description	List	TDT
330	Block Sander 1.2 amp motor	$105	$58
505	Finishing Sander orbital action 2.3 amp	$225	$119
352	Dustless Sander 3" x 21", 7 amp	$280	$144
7549	Bayonet Jig Saw VS 1" stroke, 4 amp motor	$280	$148
555	Plate Joiner with Case 5 amp motor	$320	$176
7334	Random Orbit Sander 3.7 amp motor	$221	$122
7335	Random Orbit Sander 5" variable speed, 3.7 amp	$241	$132
9647	Tiger Cub Saw Kit 4.5 amp motor	$205	$114
690	1 1/2 H.P. Router 10 amp motor	$255	$137
9367	3 1/4" Plane Kit with case	$250	$144

BOSCH

3/8" Cordless ScruDrill Kit With Keyless Chuck
Model 3051VSRK with 2 Batteries
Mfg. Sug. Price: $274.00
TDT Price: $145.00

All Bosch Router Bits Are
40% OFF
Factory List Price.

Model	Description	List	TDT
1029VSR	1/2" VSR Drill 4.8 amp motor	$205	$114
3000VSRK	3/8" Drill Kit with case 2 batteries, 9.6 volt	$239	$125
3050VSRK	3/8" ScruDrill w/case 2 batteries, 9.6 volt	$284	$135
1587VS	Top Handle Jig Saw VS orbital, 4.8 amp	$275	$146
3380DVS	5" Dustless Sander random orbit, 2.3 amp	$189	$103
1273D	Dustless Belt Sander 4" x 24", 10.5 amp	$359	$194
1615EVS	3 1/4 HP Plunge Router VS, 15 amp motor	$460	$257
1604	1 3/4 HP Router 10 amp motor	$249	$132
1613EVS	2 HP Plunge Router VS 10.1 amp motor	$330	$189
1614EVS	1 1/4 HP Plunge Router VS 7.8 amp motor	$260	$148

VISA MasterCard Discover

- If you are not satisfied with your purchase, return it prepaid within 30 days for a full refund.
- No C.O.D. shipments.
- $15.00 charge for air shipping.

*While supplies last
- We reserve the right to correct printing errors.
- Prices subject to change without notice.
- Some quantities are limited.
- These are mail order prices.
- Illinois residents add 7.25% sales tax.

SF493

TEPPER DISCOUNT TOOLS

MAIL ORDER DIVISION
107 W. SPRINGFIELD, CHAMPAIGN, IL. 61820
FAX (217) 356-1975

ORDER LINE
1-800-626-0566

Start Your Own Business! Be Your Own Boss!

BE A HOME INSPECTOR

...Unlimited opportunities for ambitious people! No previous experience needed!

No matter where you live—big city, small town or rural community—you can get the skills you need to break into this lucrative field with the ICS proven home-study "Quick-Learn" method of instruction.

- ☑ Train at home, the hours you choose.
- ☑ Keep your present job while you train for a better one.
- ☑ No previous experience or special talent needed.
- ☑ No technical jargon or boring textbooks.
- ☑ Everything is explained in plain English.
- ☑ Lessons are broken into "bite-sized" units for quick mastery.
- ☑ The most affordable tuition—and the most convenient payment plans—fit every budget. No interest or finance charges ever!

You'll get plenty of practical "hands-on" training, so you'll have the confidence you need to make your home inspection career or business a success.

Make no mistake—the number of home inspections being done each year is on the rise. With today's low home mortgage interest rates, real estate sales are way up—banks and mortgage companies often insist that a home inspection be conducted by a qualified professional prior to sale. This means an incredible increase in demand and in money-making opportunities for trained Home Inspectors. **Qualified Home Inspectors are earning anywhere from $100 to $300 per inspection**—and the average home inspection only requires a few hours of time to complete. Think what that means in terms of total weekly earning potential.

WORK PART-TIME HOURS... MAKE A FULL-TIME INCOME!

Another advantage of the home inspection field is that you can work full or part time—often you can pick and choose the hours you work as well. Many Home Inspectors make a very comfortable income just working on the weekend. So whether you want to make additional money in your spare time or start your own full-time business, ICS can help you with training that includes all the basics you'll need!

Don't be fooled by other schools who try to duplicate ICS training—we give you all the lessons and equipment you'll need for much lower tuition!

ICS urges you to compare our training to other schools offering similar courses—with ICS you'll get everything you need—lessons, equipment, special supplements for far less tuition. And, with ICS, you can choose from several low monthly payment options at 0% interest!

Course designed by top leaders in the field!

This course was especially developed by experts in the field of home inspection and follows guidelines established by the American Society of Home Inspectors—the premier organization representing the field of Home Inspection nationwide. With this course you'll train at home in all the important areas of home inspection—from the roof to the foundation, you'll have the knowledge you need to get started fast!

Mail coupon today for your free information package with all the facts about training at home to be a Home Inspector.

Growth in the real estate market is on its way up. Be ready to take advantage of the unprecedented opportunities that are waiting. Find out how you can train at home in your spare time to make money as a Home Inspector by sending for the complete information package shown here. We'll rush it to you by mail as soon as we receive the coupon below.

If coupon is missing, write directly to:
ICS School of Property Management
925 Oak Street, Scranton, PA 18515

Look at what you learn:

- ☑ Elements of Home Design
- ☑ House Construction Basics
- ☑ Inspecting Heating and Air Conditioning Systems
- ☑ Inspecting Electrical Systems
- ☑ Inspecting Kitchens
- ☑ Inspecting Appliances
- ☑ Environmental Hazards
- ☑ Energy Conservation and Code Compliance
- ☑ How to Run Your Own Home Inspection Business

AND MUCH, MUCH MORE!

Look at what you get:

SEND TODAY FOR FREE FACTS...

ICS SINCE 1890 — Over 100 Years of Excellence

SCHOOL OF PROPERTY MANAGEMENT Dept. A8DS43S
925 Oak Street, Scranton, PA 18515

L07

YES! Tell me how I can train at home in my spare time for a better job, more money, and a new career or business of my own! No obligation. No salesman will visit. CHECK ONE ONLY!

☐ **HOME INSPECTOR**	☐ Air Conditioning/Refrigeration	☐ TV/VCR Repair
☐ Real Estate Appraiser	☐ Auto Mechanics	☐ Drafting
☐ Electrician	☐ Gun Repair	☐ Desktop Publishing/Design
☐ PC Repair	☐ Computer Programming	☐ High School

Name_____ Age____

Address_____ Apt. #____

City/State_____ Zip____

Phone ( ) _____

Revolutionary "2-in-1"
TRIMMER/
MOWER

Takes the place of both your hand-held trimmer and steel-bladed mower!

The DR® TRIMMER/MOWER rolls "light as a feather" on two BIG WHEELS! TRIMS far easier, better, more precisely than hand-held trimmers. Plus MOWS everything from whole lawns (even wet!) to tough, waist-high growth with ease! Rocks, roots, stumps, etc., do it no harm because the "DR®" has no steel blade to bend or dull. Perfect for ALL mowing and trimming around smaller properties, vacation homes, etc., or for finish-up mowing and trimming after riding mowers on larger parcels. A delight for *anyone* to use!

TOLL FREE 1 (800) 446-8746

Please mail this coupon today for FREE DETAILS about the Revolutionary DR® TRIMMER/MOWER, including prices of Manual, Electric Starting and ALL-ELECTRIC Models; "Off-Season" Savings now in effect, and 30-Day Risk-Free Trial. There is no obligation.

Name_____

Address_____

City_____ State_____ ZIP_____

To: COUNTRY HOME PRODUCTS®, Dept. 10308
Box 89, Ferry Road, Charlotte, VT 05445

©1993 CHP, Inc.

NEED EXTRA INCOME?

SIGNCARVING

IS FUN & PROFITABLE

And it's easy, if you use the Marlin Woodcarvers and accessories. You can carve signs quickly at home or at swap meets. *No special training is required.* The machines do the work, the operator has the fun and the profits. These machines will also 3-D carve panels and plaques. Our templates work well with other machines.

SEND FOR OUR FULL LINE BROCHURE AND PRICE LIST AND START PLANNING YOUR FULL OR PART-TIME BUSINESS.

MARLIN INDUSTRIES, INC.
Rt. 70, Box 191, Dept D36
Cashiers, NC 28717
(704) 743-5551

The Japan Woodworker's Catalog is . . .

loaded with the best tools you can get your hands on. In our catalog you will find a huge selection of Japanese saws, waterstones, chisels, planes, carving tools, cutlery and books. Send $1.50 for our catalog and supplements during the next two years.

THE JAPAN WOODWORKER
1731 Clement E-24, Alameda, CA 94501
Phone 1-800-537-7820

Van Dyke's

Presents a Catalog with supplies for upholstery, antique restoration, wood working, caning, brass hardware, carvings and many related trades!

40 Years in Creative Arts & Trades

Many Hard-To-Find Items!

SEND $1.00 FOR CATALOG TO:
VAN DYKE'S RESTORERS
Dept. DSS, P.O. Box 278, Woonsocket, SD 57385

ONE-MAN SAWMILL
Turns Timber into CASH!

NOW! CHOOSE FROM CIRCULAR OR BANDSAW MODELS!

The Sawmill goes right to the trees and turns out smooth, true-cut lumber – even beginners get excellent results. Just one man (no crew needed) can easily cut enough on weekends to save hundreds of dollars over high lumberyard prices. Use as little as 25 horsepower. Factory-Direct selling keeps price low, and convenient time payments may be arranged.

PHONE TOLL FREE 1-800-942-4406 Ext. TW9
TIMBERKING, INC. DEPT TW9
1431 N. TOPPING, KANSAS CITY, MO 64120

SUPER BINDER
Stops Cord Hassle

Strong nylon loop attaches to item. Wrap 2 ply Velcro strap around coil either way to secure. Pull thumb tab to release. Weatherproof.

Order special 10/pkg.: (8in.)$17 (12in.)$19 (18in.)$21
Assorted 12/pkg.$23

MA RESIDENTS ADD 5% SALES TAX
MC/VISA or Mail Check or M.O. to:

MEGAMARK Products Co.
9 Jerome St. Medford, MA 02155
1-800-543-5904
24 HOUR ORDER LINE

DRAW & SAW

Scale A Pattern, Stick It Down & Cut!

Adhesive film with 1/4" grid backing makes tracing and upscaling easy. No marks or mess on cut piece. Made of durable, clear mylar to see the wood being cut. Draw with a pencil, pen or run through copier.

12" x 15' Roll
Only $15.95 ppd.

9" x 12" Sample Sheet
$1.00 (includes product info)

Dealer Inquiries Welcome

Send Check, VISA, or MC (with phone number and exp. date) to:

Graphic Arts Systems, Inc.
19499 Miles Road
Cleveland, Ohio 44128
(216) 581-9050

STOP TESTED

PRODUCTS THAT PERFORM

Continued from page 78

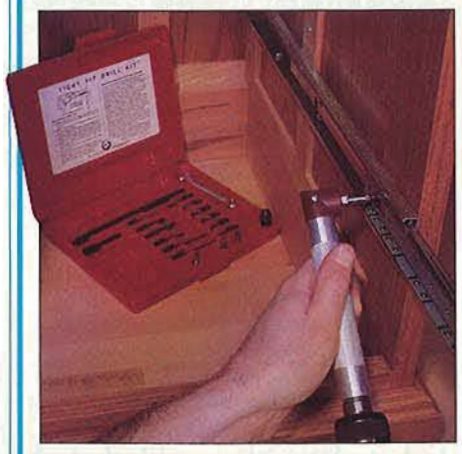
Drill kit gets you into and out of tight spots

Getting into tight areas in your woodworking projects with standard drills can be difficult or downright impossible. The Omni Tight-Fit Drill Kit helps you by converting your drill to a right-angle drilling or driving tool.

With this accessory, you can work in as little as 2" of space, because the right-angle attachment (shown at work in the photo *below*) has a threaded end for holding threaded drill bits (instead of a space-consuming chuck). The kit I tried comes with threaded drill bits in short lengths, a threaded holder for screwdriving bits, a collet adaptor for holding nonthreaded bits with ¼" shanks, various screwdriving bits, extender rods for deep, hard-to-reach spots, and a tightening wrench.

This sturdy accessory works well. The only time I experienced a problem was when I tried to back out an embedded screw. In this application, the threaded screwdriving-bit holder tended to come loose.

—Tested by Chuck Hedlund



Omni Tight-Fit Drill Kit, $69.95 for kit No. 00102 described and pictured above. You also can buy a kit with fewer attachments for $49.95. Attachments available separately from Omni Manufacturing, 12961 Sunnyside Place, Santa Fe Springs, CA 90670. Call 310/946-8444.

PORTER+CABLE

ROUTER BITS ARE 35% OFF OF LIST PRICES!

100	7.8 HP ROUTER	389
102	DOOR HANGING KIT	328
314	4 1/2" TRIM SAW	135
315-1	7 1/4" BUILDERS SAW	122
345	SAW BOSS 6" CIRCULAR SAW	165
330	SPEED BLOCK FIN SANDER	56
332	QUIKSAND 5" RNDM ORB W/STIKIT PAD	63
333	QUIKSAND W/HOOK & LOOP, DUSTLS	73
334	QUIKSAND W/STIKIT, DUSTLESS	76
351	3" X 21" BELT SANDER	145
352	3" X 21" BELT SANDER W/DUST BAG	152
352VS	3" X 21" VS BELT SANDR W/DUST BAG	162
360	3" X 24" BELT SANDER W/DUST BAG	165
361	3" X 24" BELT SANDER	178
362	4" X 24" BELT SANDER W/DUST BAG	194
363	4" X 24" BELT SANDER	185
366-1	8 1/4" BUILDERS SAW	149
503	3" X 24" BELT SNDR W/BAG, X HVY DTY	356
504	3" X 24" BELT SNDR XTRA HEAVY DTY	349
505	1/2 SHT FIN SANDER	119
548	BAYONET SAW WORM DRIVE	192
550	*NEW POCKET CUTTER*	178
555	BISCUIT JOINER WITH STEEL CASE	169
617	7 1/4" BUILDERS SAW	122
690	1 1/2 HP ROUTER W/1/4" & 1/2" COLLETS	130
691	1 1/2 HP "D" HANDLE ROUTER	147
692	TRU-MATCH JOINING ROUTER	213
693	PLUNGE BASE ROUTER, 1 1/2 HP	169
695	SHAPER TABLE W/ 1 1/2 HP ROUTER	309
696	SHAPER TABLE	125
2620	3/8" VSR DRILL, 0-1200 RPM W/CHK	99
2621	3/8" VSR DRILL, 0-1200 RPM KEYLESS	99
2640	DRYWALL VSR DRVR, 4.5 A, 0-4000 RPM	75
5003	DOVETAIL TEMPLATE	78
5009	MORTISE & TENON JIG	48
5116	OMNI JIG	259
5556	BISCUIT JOINER TILT FENCE	45
6614	1/2" ELCTRNC VSR DRILL 0-750 RPM	120
6615	SAME AS ABOVE BUT W/ KYLS CHUCK	120
6331	PLUNGE ROUTER BASE	73
7116	*NEW 24" OMNIJIG*	299
7310	LAMINATE TRIMMER, 5.6 AMP	89
7312	OFFSET TRIMMER	126
7319	TILT BASE TRIMMER	101
7335	5" RANDOM ORBIT SANDER, VS	129
7336	6" RANDOM ORBIT SANDER, VS	132
73333	RANDOM ORBIT DUST EXTRACTION	24
7349	BAYONET SAW	115
7518	3 1/4 HP FIXED BASE ROUTER-5 SPEED	264
7519	3 1/4 HP FIXED BASE ROUTER-1 SP	229
7536	2 1/2 HP FIXED BASE ROUTER	199
7537	2 1/2 HP FIXED BASE "D" HNDL RTR	209
7538	3 1/4 HP PLUNGE ROUTER-1 SPEED	229
7539	3 1/4 HP PLUNGE ROUTER-5 SPEED	264
7549	TOP HANDLE BAYONET SAW	143
7549	BARREL GRIP BAYONET SAW	143
7700	*NEW 10" LASERLOC MITER SAW*	339
9110	PORTA PLANE KIT W/CASE, CRDD BLD	264
9314	4 1/2" TRIM SAW KIT	152
9315	7 1/4" BUILDERS SAW KIT	139
9345	SAW BOSS 6" CIRCULAR SAW KIT	125
9567	3 1/4" PLANER KIT	139
9568	WORM GEAR BAYONET SAW KIT	204
9617	7 1/4" BUILDERS SAW KIT	139
9637	TIGER SAW VAR SPD RECIP SAW KIT	140
9647	TIGER CUB RECIP SAW KIT	115
9652	VERSA-PLANE KIT	309
9653	12 V, 3/8" CRDLS KIT, VS KEYLESS CHK	152
9653S	SAME AS ABOVE BUT W/2 BATTERIES!	179
9654	12 V, 1/2" CRDLS KIT, VS W/GEARED CK	162
97310	LAMNT TRIMMR KIT W/4 BASES & CS	192
97751	1/2" VS, 2 SPD HAMMER DRILL KIT	145

AEG

TXE150	6" VS DUST FREE RANDOM ORBIT SANDER W/VELCRO PAD	5144

Panasonic

EY571BC	9.6V, 3/8" CORDLESS KIT, VSR W/2 BATTERIES, CHRGR & CASE	$149
EY6205EQK	12V, 3/8" KYLS CHK, VSR CRDLS W/15 MIN CHRG, CSE & NEW IRONMAN BATTERY	188
EY6207BC	12V, 1/2" KYLS CHK, VSR, CRDLS W/15 MIN CHARGE & CASE	215
EY6900BC	12V, 3/8" CRDLS HAMMER DRILL W/15 MIN CHARGE & CASE	199

BOSCH

ALL BOSCH ROUTER BITS ARE 40% OFF OF LIST PRICES!

1194VSR	1/2" VSR, 2 STAGE HAMMER DRILL	$144
1195VSR	3/8" VAR SPEED REV HAMMER DRILL	129
1581VS	TOP HANDLE JIG SAW, VS	139
1581DVS	SAME AS ABOVE BUT DUSTLESS	169
1582VSC	CLIC BARREL HANDLE JIG SAW, VS	139
1582DVS	SAME AS ABOVE BUT DUSTLESS	169
1272D	3" X 24" DUSTLESS BELT SANDER	179
1273D	4" X 24" DUSTLESS BELT SANDER	188
1273DVS	4" X 24" VS DUSTLSS BELT SANDER	199
1347AK	4 1/2" MINI GRINDER W/CASE	105
1370DEVSK	6" VS DSTLS RNDM ORB SNDR KIT	259
1420VSR	DRYWALL DRIVER, 4.6 A, 0-4000 RPM	84
1600	2 1/4 HP "D" HANDLE ROUTER	250
1601	1 HP ROUTER	109
1602	1 1/2 HP HANDLE ROUTER	134
1603	1 1/2 HP "D" HANDLE ROUTER	142
1604	1 3/4 HP ROUTER	134
1608	LAMINATE TRIMMER	84
1608U	UNDERSCRIBE TRIMMER	117
1609K	INSTALLERS KIT WITH 3 BASES	174
1609KX	DELUXE INSTALLERS KIT W/4 BASES	197
1613	1 3/4 HP PLUNGE ROUTER	163
1613EVS	2 HP VAR SP PLUNGE ROUTER	183
1614	1 HP PLUNGE ROUTER	127
1614EVS	1 1/4 HP VAR SP PLUNGE ROUTER	149
1615EVS	3 1/4 HP VAR SP PLUNGE ROUTER	254
1651	7 1/4" CIRCULAR SAW	99
3650VSRK	9.6 V, VSR CRDLS DRILL W/2 BAT, CS	134
3258	3 1/4" PLANER	136
3292DVS	5" VS DUSTLESS RANDOM ORBIT	96
11203	1 1/2" ROTARY HAMMER W/STOP ROT	429
11304	THE BRUTE BREAKER HAMMER	1195
11305	DEMOLITION HAMMER	699

SUPER SPECIAL!

636 OSCILLATING TRIANGULAR SANDER — $189

INCLUDES CASE & PAPER ASSORTMENT

QUICK-GRIP BAR CLAMPS

00506	6" BAR CLAMP	14
00512	12" BAR CLAMP	17
00518	18" BAR CLAMP	18
00524	24" BAR CLAMP	19
00536	36" BAR CLAMP	23
05162	2 PC 6" BAR CLAMP GIFT PACK	23

Jorgensen

ITEM	JAW LENGTH	OPEN CAP	OUR PRICE EACH	BOX OF 6
ADJUSTABLE HANDSCREWS				
#0	6"	4 1/2"	11.85	66.90
#1	10"	6"	12.65	70.60
#2	12"	8 1/2"	14.95	80.90
#3	14"	10"	18.95	101.90
#4	16"	12"	24.95	143.90
STYLE 37 2 1/2" THROAT 1/4" x 3/4"				
3706		6"	5.20	34.50
3712		12"	5.70	37.50
3718		18"	7.20	40.50
3724		24"	8.20	43.50
3730		30"	9.10	48.50
3736		36"	10.20	55.50
PONY CLAMP FIXTURES				
#50	3/4" BLACK PIPE CLAMPS			7.65
	BOX OF 12 $84.90			
#52	1/2" BLACK PIPE CLAMPS			6.50
	BOX OF 12 $69.50			

freud

FREUD ROUTER BITS ARE 40% OFF OF LIST PRICES!

JS100	BISCT JOINR W/CS $164-AFTER REBATE	131
FT2000E	3 1/4 HP PLNG RTR VS $205-AFTER REB	175
FRT2000	ROUTER TABLE - WOOD	169
EB100	EDGE BANDING SYSTEM	214
LU82M010	10" X 24T FLAT TOP RIP BLADE	36
LU84M010	10" X 50T ATB COMBO BLADE	42
LU85M010	10" X 80 T ATB FOR MIRROR FINISH!	50
LU87M010	10" X 24T RIP BLADE THIN KERF	39
LU88M010	10" X 60T CROSSCUT THIN KERF	46
LU89M010	10" X 72T TCH NON FERROUS METAL	59
LU91M008	8 1/2" X 48T FOR COMPOUND MITER	43
LU92M010	10" X 80T TCH - DEST FOR LAMINATES	59
LU88M010	10" X 60 T TCH LAMINATES OR WOOD	69
TK206	10" X 24T THIN KERF RIPPING	25
TK306	10" X 40T THIN KERF COMBINATION	25
TK906	10" X 50T THIN KERF CROSSCUT	30
TK406	10" X 60T THIN KERF FINISHING	34
WC104	4 PC WOOD CHISEL SET W/CASE	36
WC106	6 PC WOOD CHISEL SET W/CASE	49
WC110	10 PC WOOD CHISEL SET W/CASE	69
FB107	7 PC FORSTNER BIT SET W/CASE	55
FC107	7 PC CARBIDE FORSTNER BIT SET	72
SD206	6" SAFETY DADO WITH CASE	112
SD308	8" SAFETY DADO WITH CASE	116
91-100	13 PC ROUTER BIT SET, 1/2" SHANK	165
99-100	CABINET DOOR SET, 1/2" SHANK	164

SKIL

LIMITED TIME OFFER

RECEIVE A $20 CASH REBATE ON EVERY $200 WORTH OF SKIL MERCHANDISE PURCHASED - CALL FOR DETAILS

77	7 1/4" WORM DRIVE CIRCULAR SAW	145
1575	3 3/4" PLANER WITH CASE	119
1606-02	BISCUIT JOINER W/CASE & 200 BISCTS	125
1912	LAMINATE TRIMMER W/CARBIDE BIT	69
1870	2 1/4 HP PLNG RTR, 12 AMP, 23,000 RPM	159
1875	2 1/4 HP EVS PLNG RTR, 10-23,000 RPM	174
2736-04	12V CRDLS VSR KYLS W/2 BAT, CASE	156
2976-02	3 3/8" CRDLS TILE CTTR, 12V W/XTR BTL	159
2977-02	3 3/8" CRDLS CIRCULAR SAW KIT, 12V	144
3330	16" SCROLL SAW	135
3370	4" BELT/6" DISC SANDER	135
3380	8" DRILL PRESS	135
3400	10" TABLE SAW	179
4560-02	JIG SAW KIT, VS, 3.5 AMP W/BLOWER	95
4560-02	JIG SAW KIT, VS W/ORBITAL ACTION	106
5510	5 1/2" PROFESSIONAL CIRCULAR SAW	108
5525	6 1/2" 50° BEVEL CIRC SAW, 13 AMP	101
5557	*NEW! 7 1/4" CIRCLR SAW W/PIVT FOOT*	112
5660	8 1/4" CIRCULAR SAW W/60 DEG BEVEL	158
5750	10 1/4" PROFESSNL CIRC SAW 15 AMP	279
5860	8 1/4" WORM DRIVE CIRC SAW	169
7484	5" RANDOM ORBIT SANDER, 10,000 RPM	99
7575	1/4 SHEET PALM SANDER	49
7576	1/4 SHEET PALM SANDER, DUSTLESS	54
9410	4 1/2" DISC GRINDER	59
9665	7" DISC SNDR GRNDR, 15 AMP, 6000 RPM	119

Milwaukee

0228-1	3/8" DRILL, VSR, 3.5 AMP, 0-1000 RPM	102
0375-1	3/8" CLOSE QUARTER DRILL	125
0406-1	9.6V KYLS CDLS DRILL KIT W/2BAT, CS	165
0107-1	SAME AS ABOVE BUT 12 VOLT	179
3002-1	ELECTRICIANS RIGHT ANGLE DRILL KIT	202
3102-1	PLUMBERS RIGHT ANGLE DRILL KIT	202
3107-1	1/2" VSR RIGHT ANGLE DRILL KIT	207
5370-1	1/2" VSR, 2 SPEED HAMMER DRILL	166
5397-1	3/8" VSR HAMMER DRILL W/CS & BITS	137
5620	1 1/2 HP ROUTER	182
5680	2 HP ROUTER	199
5925	3" X 24" BELT SANDER W/DUST BAG	235
5936	4" X 24" BELT SANDER W/DUST BAG	255
6012	1/3 SHEET FINISHING SANDER	115
6014	1/2 SHEET FINISHING SANDER	120
6016	1/4 SHEET FINISHING SANDER	99
6017	1/4 SHEET FINISHING SANDER W/BAG	55
6140	4 1/2" MINI GRINDER, 5.8-11 SPINDLE	91
6142	4 1/2" MINI GRINDER KIT COMPLETE	112
6256	TOP HANDLE JIG SAW	143
6265	7 1/4" CIRCULAR SAW, 13 AMP	120
6968	6965 W/FENCE, CARBIDE BLADE & CASE	137
6507	VAR SPEED SAWZALL W/BLADES & CSE	139
6500	SAME AS 6507 BUT W/PERMANENT CRD	139
6511	2 SPEED SAWZALL W/BLADES & CASE	129
6527	SUPER SAWZALL W/BLADES & CASE	164
6529	SAME AS 6527 BUT W/PERMANENT CRD	164

RYOBI

BT3000	10" TBL SAW W/SLIDING TAGLE W/STND	539
TS2510	10" DELUXE MITER SAW	190

RECEIVE A $25.00 CASH REBATE WITH EVERY PURCHASE OF $500 OR MORE. OFFER GOOD THRU 6/15/93 . . . . CALL FOR DETAILS

PORTER+CABLE — RANDOM ORBIT SANDER MODEL 332K — Includes 100 sheets of paper, Stikit pad, & case — OUR PRICE $89.00 — MODEL 334K - Same as above but w/dust canister & perforated paper - $99.00

HITACHI — 8 1/2" SLIDE COMPOUND MITER MODEL C8FBK — Includes 24T & 60T carbide blades, vise & extension wing assemblies — OUR PRICE $529.00

freud — MODEL FT2000E 3 1/4 HP Variable Speed Plunge Router — OUR PRICE $205.00 — LESS $30 REBATE - FINAL COST $175.00

BOSCH — TOP HANDLE JIG SAW MODEL 1581K OR 1582K — Includes jig saw, carrying case & 30 assrtd Bosch blades — OUR PRICE $179.00

freud — BISCUIT JOINER MODEL JS100K — Includes biscuit joiner, case & 1000 assorted biscuits — OUR PRICE $188.00 - LESS $30 REBATE - FINAL COST $158.00

PORTER+CABLE — 6" VAR. SPEED R.O. SANDER MODEL 7336K — Includes sander, carrying case and 100 sheets of paper — OUR PRICE $168.00

senco — MODEL SLP20 PINNER — WILL SHOOT A PIN 5/8" TO 1 5/8" LONG INCLUDES CASE! — OUR PRICE $245.00

PORTER+CABLE — 1 1/2 HP ROUTER MODEL 690K — Includes 1/4" & 1/2" collets, edge guide, template guide kit, & carrying case — OUR PRICE $194.00

senco

SLP20	*NEW PINNER, 5/8" - 1 5/8" CAP W/CS*	245
SCN200R	ROOFING NAILER	479
SN4	FRAMING NAILER-6 TO 16 PENNY	467
SN325	FRAMING NAILER-6 TO 12 PENNY	396
SFN1-2	FINISH NAILER-1" TO 2" CAPACITY	258
SFN2B	FINISH NAILER-1 1/2" TO 2 1/2" CAP	376
SKS	FINISH STAPLER-5/8" TO 1 1/2" CAP	249

DELTA

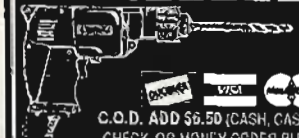
31-080	1" BELT/5" DISC SANDER	99
31-460	4" BELT/6" DISC SANDER	129
40-560	16" SCROLL SAW, 2 SPEED	169
22-540	12" BENCH TOP PLANER	398
28-180	BENCH TOP BAND SAW	167
33-060	NEW SIDEKICK 6 1/2" FRAME & TRIM SAW	379
50-070	DUST COLLECTOR SWEEPER, 3/4 HP	249

BOSTITCH

N80S	STICK NAILER	$349

HITACHI

M12V	3 HP VAR SPEED PLUNGE ROUTER	226
TR12	3 HP PLUNGE ROUTER	179
C12FA	12" DELUXE MITER SAW	318
C8FB	8 1/2" SLIDE COMPOUND MITER SAW	477
CJ65V2	TOP HANDLE JIG SAW W/CASE	156
F30A	3 5/8" PLANER, 8.3 AMP	179
M8V	VAR SPEED PLUNGE ROUTER, 1/4"	154
TR6	LAMINATE TRIMMER	92
P12R	12" PORTABLE PLANER	799
P12RA	12" PORTABLE PLANER 6" JOINTER	999
P20SB	3 1/4" PLANER, 3.4 AMP	92
SV12SA	4 3/8" PALM GRIP SANDER	46
SV12SD	4 1/2" ORBITAL SANDER W/DUST BAG	183
SV12V	4 1/2" ORBITAL W/BAG, VAR SPEED	144
SB75	3"x21", 2 SPEED BELT SANDER	135
SB9T	3"x24", 2 SPEED BELT SANDER	150
SB10T	4"x24", 2 SPEED BELT SANDER	166
C10DFKBE	9.6V, CRDLS DRILL KIT W/2BAT & CS-KYLS	149



INTERNATIONAL TOOL CORPORATION • 1939 TYLER STREET, HOLLYWOOD, FLORIDA 33020

1-800-338-3384 FREE FREIGHT & SAME DAY SHIPPING ON MOST UPS ORDERS OVER $25.00 MINIMUM PURCHASE ©

C.O.D. ADD $6.50 (CASH, CASHIERS CHECK, OR MONEY ORDER PLEASE)

QUANTITIES LIMITED - NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS - PRICES SUBJECT TO CHANGE WITHOUT NOTICE FAX US YOUR ORDER AT 1-305-927-0291

TRADESMAN

FREE FREIGHT **POWER TOOLS** FREE FREIGHT

10" COMPOUND MITER

$199.00 Contractor Quality

Lightweight Design - 38 lbs.
15 Amp Ball bearing Motor,
Automatic Blade Brake and Guard
Cuts 4" x 4" or 2" x 6"
FREE Accessory Kit
Five Year "Limited" Warranty
8-1/4" Compound - $129

PNEUMATIC PALM NAILER

Automatically hammers 6d to 50d common nails. Ideal for tight corners. Drives ring-shanked or galvanized nails with ease

$99.00

50 - 125 P.S.I.
2 - 4 CFM
One Year Warranty

8" 5-SP DRILL PRESS

$109.00 *FIVE* Year "Limited" Warranty

Cast Iron Construction
Ball Bearing 1/4 H.P. Induction Motor
5 - Speeds 620-3100 R.P.M.
Adjustable Cast Iron Table 6-3/8"x6-3/8"
1/2" Drill Chuck 2" Spindle Stroke
15" Bench Scroll Saw - $ 109

ORDER BY MAIL OR PHONE
1-800-845-TOOL
THE FACTORY STORE
P.O. Box 503
Agawam, MA 01001

KNIFEMAKING PROJECTS

APACHE HUNTER KIT
21.95 + 5.95 Shipping

PRE-SHAPED BLADES and step-by-step instructions make knifemaking fun and easy! Material and tool lists are included with each project kit. Our 68-page catalog of hard to find tools, polishing supplies and other unique items includes more than 85 PRE-SHAPED BLADES, handle materials, and other knifemaking supplies. Order today and we will include our KNIFEMAKING PROJECTS booklet FREE! Send $3.00 for catalog and booklet to:

JANTZ SUPPLY
309 W. Main Dept. W Davis, OK 73030
1-800-351-8900

It's A Train

It's A Whistle!

It's all wood and fun to build with our easy to follow plans.

This unique, all wood train engine with it's integral double whistle system creates a dual pitch sound like a real train whistle. *Irresistible!*

For plans send check or money order for $8.89
To: LACK WOOD PRODUCTS
509 CYPRESS GARDENS BLVD.
WINTER HAVEN, FL 33880

FOR INFORMATION ABOUT PLACING AN ADVERTISEMENT IN

Better Homes and Gardens.
WOOD®

PLEASE WRITE:
CHRIS SCHRAFT
WOOD MAGAZINE
750 THIRD AVENUE
NEW YORK, NY 10017

OR CALL COLLECT: 212-551-6904

FREE BROCHURE!

★THE WOODWORKING SHOWS★
machinery • tools • supplies

12 SHOWS THIS FALL!

- Chicago
- Columbus
- Delaware Valley
- Denver
- Detroit
- No. California
- Pittsburgh
- Portland
- Seattle
- So. California
- Twin Cities
- Washington, D.C.

• *plus many others!*

Call for free brochure
Monday - Friday 8 am - 5 pm Pacific Time
1-800/826-8257 or 310/477-8521

NEW! DRUM SANDER
with Infinitely Variable Power Feed!

At last! A complete power-feed Drum Sander at an affordable price! Choose from 26" and 38" models.

Now you can save hours of tedious hand scraping and sanding. In a matter of seconds, you can turn out satin-smooth panels, doors, shelves and other glued-up pieces. No more dips and waves. No more gouging. Infinitely variable power feed gives you total control. Turns out perfectly flat, glass-smooth panels that look better and take stain more evenly than any you could do by hand.

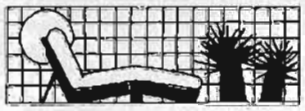
Send for complete facts. See how the Woodmaster can finish cabinet pieces, resawn stock, paneling, tabletops, knees, burls and much more! Made in U.S.A. Easy terms.

FREE FACTS Call Toll-Free 1(800) 821-6651 Ext. RW49

☐ YES! Please rush my FREE INFORMATION KIT and details on your 30-Day Free Trial Guarantee.

Woodmaster Tools, Inc. Dept. RW49
1431 N. Topping, Kansas City, MO 64120

NAME_____
ADDRESS_____
CITY_____
STATE_____ ZIP_____
PHONE ( )_____



FUTON SOFA-BED FRAMES
TWIN - FULL - QUEEN

Start a profitable business at home, or build your own! Send for Ed Miera's 8½" x 11" Plan Book covering eight exclusive Southwest/Classic designs and detailed step-by-step instructions, straight from the shoproom floor.

For $19.95 you receive plans, resources, and instructions. Add $2 for shipping and handling.

Send check or money order to:
DESERT ROSE
Home Furnishings
P.O. BOX 776
DENVER, CO 80201
Colo. residents add 6% tax

GREAT **ENCOURAGEMENT** FOR **SHIPWRIGHTS!**

All gentlemen shipwrights and able bodied modelists who have a mind to provide for themselves amusement and satisfaction through the traditional craft of ship modeling, an opportunity now offers to acquire, through the minimal cost of one Colonial Dollar ($1.00), a catalog of fine and unique ship model kits, plans, books and fittings from the renowned company of Model Expo located in Mt. Pocono in the state of Pennsylvania.

Send $1.00 for a catalog to:
MODEL EXPO, INC.
Dept. WD53, PO Box 1000, Mt. Pocono, PA 18344

Name_____
Address_____
City_____
State_____ Zip_____

AMAZON PRODUCTS
Since 1978

Formulated for easy application - and durability. Ideal for all your wood projects: Cabinets, Desks, Chairs, Shelves, Toys, etc.

NON-TOXIC
NON-COMBUSTIBLE
Full Quart $14.95
Full Pint $8.95
Add $3.95 S/H

AMAZON
P.O. Box 530156, Dept. WM
Miami Shores, FL 33153
VISA/MC **1-800-832-5645**
1993 Catalog $1.00 - Free with Order

Sand-Rite

Pneumatic Drum/Brush Head Sander
Eliminate Tedious Hand Sanding!

Model No.
DB-612
Pneumatic sanding drum. Available in five diameters, 2" to 8". Operator-regulated inflated drum conforms abrasive sleeve to contoured work.
Sand irregular surfaces without loss of shape or detail.
Made in USA

Our nationwide dealer network serves you.
To order, call **Toll-Free 1-800-521-2318**
or your nearest dealer or a Free brochure.

Sand-Rite MANUFACTURING CO.
321 N. JUSTINE ST. ■ CHICAGO, IL 60607

One Stop Wood Shop

Domestic and exotic hardwood plywood and lumber, marine plywood, over 30 species in stock- all under one roof.
Custom cutting services to your exact specifications with little or no waste at competitive prices!
We specialize in bundling and shipping.

Call (617) 666-1340 today for catalog and quote.

Boulter Plywood Corp.
24-WD Broadway, Somerville, MA 02145

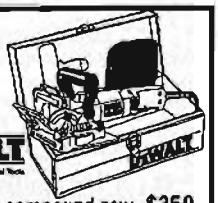
MIRRORA®

THE HAND MIRROR COMPLIMENT

PERFECTLY BEVELED MIRROR

FLORAL
Glass & Mirror, Inc.
895 Motor Parkway, Hauppauge, NY 11788
516-244-0200 • 800-647-7672

NEW!
Heavy Duty Plate Joiner Kit
$225. DEWALT
#DW682K



DW705	12" compound saw	$359.
DW704	12" miter saw	299.
DW945K-2	12V drill w/2 batteries	169.
DW944K-2	9.6V drill w/2 batteries	149.
DW364	7-1/4" saw with brake	144.
DW254	0-2500 deck scrugun	89.

TOOL CRIB OF THE NORTH
PO Box 1716
Grand Forks, ND 58206
1-800-358-3096

BINKS **MACH 1 CUB HVLP Touch-up Gun**

Ultimate precision and operator comfort

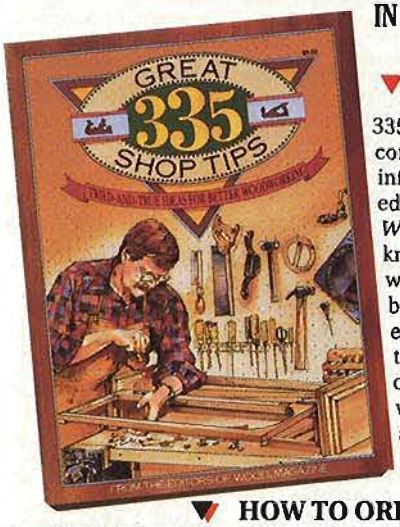
Binks CUB Touch-Up Gun is the newest addition to the award-winning MACH 1 HVLP Spray System.

- Exceptional comfort...weighs only 10 ounces and features special lateral index finger trigger.
- Easy maneuverability... compact CUB provides superior balance for greater spraying ease.
- Natural control... unique nozzle design produces unsurpassed atomization quality and transfer efficiency.

Available in siphon, pressure, or gravity feed models. CUB meets virtually all environmental codes. Contact your Binks Representative or Binks Manufacturing Company, 9201 Belmont Avenue, Franklin Park, IL 60131-2887.

335 GREAT SHOP TIPS

THE BEST IDEAS COLLECTED FROM OUR POPULAR COLUMN "TIPS FROM YOUR SHOP (AND OURS)" IN *WOOD*. MAGAZINE



335 GREAT SHOP TIPS contains valuable information from the editors and readers of *WOOD* magazine - shared knowledge that makes working in your shop better, faster, safer, and easier. We've organized the tips into 24 convenient categories with an index for easy accessibility to any subject.

HOW TO ORDER

To order *335 Great Shop Tips*, send your name, daytime phone number and address, city, state and zip, plus $10.95 (Canadian readers add $1.00), which includes postage and handling to:

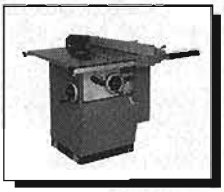
335 GREAT SHOP TIPS
P.O. Box 9255
Des Moines, IA 50306

Allow 6-8 weeks for shipping and handling.

To order by phone, call 1-800-374-9663 (9 a.m. to 5 p.m. CST)

BUILDING OUR NAME...

BUILDING OUR DREAMS...



UNI. TABLE SAW
TS-2010 10" $1079
TS-1212 12" $1479

PLANER
WP-0012 12" $369
WP-1015 15" $769
WP-0020 20" $1295

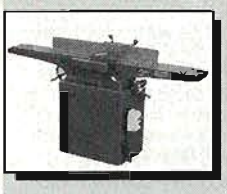
PNEU. DRUM SANDER
FL-901 $259

SANDER
SD-0069 6X9 $189
SD-0612 6X12 $429

WOOD LATHE
CL-1140 40" $569

SHAPER
SP-30 1" $849

4 SIDE MOULDER
SM-0604 6" $25,900



RIP SAW
TRS-0012 12" $8950

DIGIT CONTROL WIDE BELT SANDER
CA-2548 24" $6290
CA-3760 36" $9390

JOINTER
JT-1006 6" $259
JT-1008 8" $639
JT-0012 12" $1895

BAND SAW
BS-0163 16" $499
BS-0183 18" $609
BS-0202 20" $1290

DUST COLLECT
DC-90 1HP $189
DC-101 2HP $299
DC-102 3HP $459

WE SPECIALIZE IN CUSTOMER SATISFACTION

ONE YEAR WARRANTY OFFERING A LINE OF FINE QUALITY MACHINE TOOLS

MAIN OFFICE:
9031 E. SLAUSON AVE.
PICO RIVERA, CA 90660
TEL: (310) 949-3747

ORDER DESK ONLY:
(800) 786-LOBO
CHICAGO:
(708) 798-9229

ATLANTA:
(404) 416-6006
CANADA:
(519) 291-2280

LOBO POWER TOOLS

Print this article

Worth writing for...

You can get useful ideas and product information by mail. Use the coupon in this section to order your choice of literature listed below. Each company mails the catalogs or information directly to you.

POWER TOOLS

SCROLL SAW, CRAFT & WOODWORKING CATALOG—Specialty products from the exclusive distributors of HEGNER, the precision saws with SCROLLVERGNUEGEN. Complete information on scroll accessories, including blades and lettering guides. Also JET Clamps, HEGNER Lathes, PLANO Vertical Glue Press, and more. Toll-free customer service hotline included! AMI, LTD. $2.00. *Circle No. 3.*

TOOL CRIB CATALOG—Since 1948, woodworkers, homebuilders, industry and schools across the country have looked to the Tool Crib as their source for power tools and equipment. Our prices are low; our sales people are knowledgeable; and our service is first-rate! We stock over 10,000 tools with top name brands like Black & Decker, Delta, Ryobi, Makita, Powermatic, Jet, Freud, Bosch, Porter Cable, Milwaukee and many more. We offer competitive prices with quality service and same day shipping. Send for your NEW 1993 catalog. It's worth it! TOOL CRIB. $3.00. *Circle No. 6.*

TRANSPOWER, CP TOOLS INC.—A fine line of quality woodworking machinery, saws, shapers, planers and more. Send for free catalog. CP TOOLS INC. Free. *Circle No. 15.*

DREMEL'S MINIMITE MODEL 750—Compact cordless rotary tool provides pinpoint accuracy for precision woodworking, refinishing, model building & other detail-oriented craft projects. The lightweight tool provides 2 speed operation powered by a 4.8-volt motor & rechargeable, replaceable battery pack. Catalog. DREMEL. $1.00. *Circle No. 33.*

ENLON IMPORT CORP. GRAND OPENING—We would like to recognize you as our most important asset. We offer a large selection of fine woodworking machinery, tools and accessories for your business and home workshop. Take advantage of our grand opening specials. Send for catalog. ENLON IMPORT CORP. Free. *Circle No. 35.*

NEW POWER TOOL ELIMINATES HAND SANDING—No more bloody knuckle, sore finger sanding. Unique sander, sands along edges and into corners, without bouncing off or running away. The secret is the distinct triangular sanding pad, combined with a high speed oscillation. German made. Brochure shows sander in action. FEIN POWER TOOLS, INC. $1.00. *Circle No. 37.*

INCA MACHINERY INFORMATION—Complete information on the famous line of Inca woodworking machines. Designed for precision work by the small to medium sized cabinet shop. Used by thousands of hobbyists and professionals. Table saws, bandsaws, joiner/planers, dust collector, radial arm saw. GARRETT WADE CO. Free. *Circle No. 44.*

HOME LUMBER—For the largest selection of Makita at the right price. We also provide great pricing on Amana Carbides, DeWalt power tools, Bostitch Air Nailers & David White Instruments. Same day shipping, free freight. We accept Visa, Mastercard, Discover, COD. Send for information. HOME LUMBER. $1.00. *Circle No. 48.*

INTERNATIONAL TOOL CORPORATION CATALOG—features the best tools & accessories at the absolute lowest prices anywhere! Whether you are a home woodworker or an industrial user, you will find an incredible selection featuring Porter Cable, Bosch, Skil, Freud, Delta, Milwaukee, Hitachi, and many, many more. We offer same day shipping, the most knowledgable sales staff and free shipping on most UPS orders in the continental U.S. INTERNATIONAL TOOL CORP. Free. *Circle No. 49.*

LOBO POWER TOOLS—Fine crafted woodworking power tool, top quality, affordable prices. A commitment of customer satisfaction, with a full 1 year warranty. We sell a complete line with many options for our band saws, table saws, planers, jointers, double drum sanders, edge sanders, wide belt sanders, power feeders and many, many more. Send today for a free brochure. LOBO POWER TOOLS. Free. *Circle No. 57.*

WOODWORKING MACHINE CATALOG—New 24-page color catalog introduces many new do-it-yourself woodworking machines. Includes planers, dust collectors, drill presses, sanders, lathes, and specializes in scroll saws and accessories. PENN STATE INDUSTRIES. Free. *Circle No. 75.*

DUST COLLECTOR SYSTEMS—Keep your shop clean and safe from saw dust with one of our large capacity Commercial Style Dust Collection Systems. Catalog features our new DC-3 1-1/2 H.P. Portable System. Free hose and adapters are supplied with any purchase. Full line of Dust Collection accessories is available from Penn State Industries. Catalog. PENN STATE INDUSTRIES. Free. *Circle No. 76.*

SURFACE PLANER—Information package available from Penn State Industries describing the specifications and applications of its super 12½ inch surface planer. Special discount pricing available on current promotion. PENN STATE INDUSTRIES. Free. *Circle No. 77.*

GET TO THE FINISH LINE FASTER—with a Performax drum sander. Don't spend hours with a hand-held belt sander. Sand ultra-wide stock ultra-smooth in just minutes. Models start at $300 to $3495. Select the model that fits your budget and your needs. New metal abrasive fasteners keep sandpaper tight without re-wrapping. PERFORMAX PRODUCTS. $1.00. *Circle No. 78.*

HAND LAMINATE & WOODWORKING TOOLS—A new catalog is now available that covers 25 groups of special hard-to-find industrial-quality hand tools. Included are VIRUTEX® slitters, PLASTI-CUT® files, laminate shears, scoring cutters, trimmers, plate joiners, and many more. PRACTICAL PRODUCTS CO. $1.00. *Circle No. 82.*

WOODWORKING TOOLS & ACCESSORIES—While the history of RBIndustries goes back 60 years, this is the first time we've brought together all our precision-made tools and accessories in one catalog. The Hawk Precision Scroll Saw, 4-in-1 Woodplaner, Panel Master Door Machine, Router System, and much more. Quality equipment built here in the heart of America. When you buy from us, you deal directly with the manufacturer. Our prices, quality, and 3 year Warranty reflect our commitment. Send today for FREE information. RB INDUSTRIES, INC. Free. *Circle No. 84.*

MINI POWER TOOL CATALOG—Designed for easy reference, Ryobi's "shirt pocket" Power Tool Catalog includes our complete line of power tools, categorized by type: bench top, cordless, hand-held and stationary models. It features individual tool photographs with specifications and clear descriptions that offer specific uses and benefits. Accessories are also listed. Send for catalog. RYOBI. Free. *Circle No. 86.*

TOOLS ON SALE™—A division of Seven Corners Ace Hardware, Inc. offers a catalog of over 400 pages of the most popular brands of power tools available anywhere, all at discounted prices. Included are saws, planers, sanders, routers, drills and more from manufacturers such as Milwaukee, Makita, Porter Cable, Black & Decker, Dewalt, Freud, Bosch, Delta, and many more. Now introducing a full range of Werner brand ladders. Tools on Sale™ division of SEVEN CORNERS ACE HARDWARE, INC. $1.00. *Circle No. 92.*

PORTABLE SAWMILLS—Convert logs into valuable lumber—Wood-Mizer® Products manufactures a line of portable bandsaw mills that allows the novice as well as the experienced sawyer to safely convert standing logs into lumber. Then, with the use of our SolaryDry™ Kiln or Vacu-Kiln™ to dry your lumber, you could increase the value of every board you produce. We manufacture some of the most progressive woodworking equipment on the market today. Product videos available. Send for our 31-page catalog. WOOD-MIZER PRODUCTS. $2.00. *Circle No. 94.*

SERIOUS POWER TOOL CATALOG—16 pages plus a price list containing pictures, specifications and Tepper Discount Tools pricing on Black & Decker Industrial, Bosch, Porter Cable, and Milwaukee portable power tools stocked by Tepper Discount Tools. These are serious tools for the serious tool user. Cost is $1 to cover postage and handling. TEPPER DISCOUNT TOOLS. $1.00. *Circle No. 100.*

HAND TOOLS

PERSONAL BRANDING IRONS—Brochure describes branding irons that enable you to put your name on your work quickly and easily. Made especially for branding wood, they are available with 1, 2, 3 or 4 lines of copy. Changeable date also available. NOVA TOOL CO. $1.00. *Circle No. 160.*

IMPROVE YOUR WOODWORKING SKILLS!—Craftsmen around the world have discovered the secret of better quality work. The 72 page Japan Woodworker Catalog is loaded with a huge selection of Japanese saws, waterstones, chisels, gouges, carving tools, planes, cutlery and garden tools. Send for 1992 catalog and all supplements for two years. THE JAPAN WOODWORKER. $1.50. *Circle No. 190.*

STAINS/FINISHES

AMAZON'S PREMIUM FINISHING OILS—These are the finest, enviro-friendly oils. Available since 1978. Golden Teak oil — Mahogany oil — Oakwood oil — Pure Tung oil — Danish oil — Cedar & Lemon oils. Sold and used, worldwide, in fine furniture finishing as well as toys. All imported and refined oils formulated for all projects. Catalog. AMAZON PRODUCTS. $1.00. *Circle No. 200.*

PLANS

OVER 1500 WOODCRAFT PATTERNS!—Enjoy making gifts, toys, lawn ornaments, holiday designs, whirligigs, folk art, bird houses and feeders, household and yard accessories plus much more! Simple enough for the beginner, fun and profitable for the pro. Send for catalog plus sample pattern. ACCENTS IN PINE. $2.00. *Circle No. 310.*

SALES TESTED DESIGNS—available as plans only, parts kits, or plans and parts kits. Complete stock of parts, tools and supplies. Door Harps to Digital Electronic/Wood Projects. Full size plans! Catalog. CRAFTER'S MART. $1.00. *Circle No. 328.*

EXCLUSIVE SOUTHWESTERN HOME FURNISHINGS—Taos-style day bed w/ cedar chest under; authentic mini-chest/saddle rest; territorial table-bench; rustic garden tote. Brochures (price refunded with order) feature traditional and futon sofa-bed frames. Planbook includes plans with full-size details, resources, easy-to-follow instructions. All proven at craft fairs and in the retail showroom. Available nowhere else. DESERT ROSE. $1.00. *Circle No. 340.*

FULL-SIZE FURNITURE PLANS CATALOG—Illustrates and describes over 200 plans for making furniture of quality found in museums and fine furniture stores. Plans include rolltop desk, cradles, dining tables, chairs, buffets, chests, gun cabinets, poker table, children's furniture, rocking horse, spinning wheels, and more. Bill of materials exploded drawings assist the woodworker. FURNITURE DESIGNS, INC. $3.00. *Circle No. 345.*

THE GIZZMO FACTORY—presents 3 unique birdhouse designs for the intermediate skill level craftsman. The Castle, The New England Church, & The Airplane Hangar. Complete working drawings, cutting details, sequential assembly drawings with photos. Step by step instructions. Send $1.00 for photo and information packet. THE GIZZMO FACTORY. $1.00. *Circle No. 360.*

IT'S A TRAIN AND A WHISTLE!—This unique, all wood train engine, with its internal double whistle system creates a dual pitch sound like a real train. Kids and adults are delighted when they hear its whistle. A real attention getter. Send for info. LACK WOOD PRODUCTS. 50¢. *Circle No. 395.*

PROJECT PLANS—Full-size patterns for over 500 easy-to-build woodworking projects. Nation's leading source for scroll saw patterns, cow projects, toy plans, yard ornaments, wood furniture, etc. Over 3000 hard-to-find specialty items. Send for your big new 80-page catalog. MEISEL HARDWARE SPECIALTIES. $2.00. *Circle No. 401.*

NEW DESIGNS, LAWN FURNITURE, GARDEN STRUCTURES, NEW COLOR CATALOG—Just completed rose arbor archway with seats and planters, mystic wishing well with running water, unique planters and bench combo and a beautiful garden bridge. Walk through octagon & hexagon picnic tables, patio chairs, rockers, swings, adirondack furniture, jungle gym and other real fun projects. Easy to follow plans, materials list, step by step instructions. Excellent business opportunity. SPECIALTY FURNITURE DESIGNS. $2.00. *Circle No. 445.*

WOOD TOY PATTERNS—Patterns for all ages including children's patterns and executive toys. New catalog has many new patterns to choose from including parts and wheels. Send for new catalog and receive a coupon for free wheels and axle pegs. TOYS AND JOYS. $1.00. *Circle No. 465.*

THE COMPLIMENTS NEVER END!—when you show off your completed projects made from our full size patterns. Over 1800 unique, easy to make designs include popular folkart, wind action whirligigs, old world Santas, country furniture, shelves and shadow boxes, action toys, 3D layered animals, country critters, yard ornaments, Christmas yard decorations and more! No enlarging required—just trace our patterns onto wood and cut out. Fast service, satisfaction guaranteed. Send for our latest catalog. THE WINFIELD COLLECTION. $1.00. *Circle No. 480.*

LUMBER

QUALITY EXOTIC LUMBER/TURNING WOODS— We offer a comprehensive selection of fine quality exotic woods. Also available are mechanisms for making wooden barrel pens/pencils/roller balls/ fountain pens. Ebony, Kingwood, Tulipwood, Snake-wood, African Blackwood, Cocobolo, Bloodwood, Figured Maple, Spaulted Maple, Padauk, etc. Unique and unusual turning woods and burls are also available. Send for catalog. BEREA HARDWOODS. $1.00. *Circle No. 510.*

ONE STOP WOOD SHOP—Domestic and exotic hardwood plywood and lumber, marine plywood, over 30 species in stock—all under one roof. Custom cutting services to your exact specifications with little or no waste at competitive prices! We specialize in bundling and shipping. Send for catalog. BOULTER PLYWOOD CORP. Free. *Circle No. 512.*

ATTENTION WOOD READERS—If you want to spend more time in your wood shop and less time shopping for wood, PROJECT-PAK is for you! Our catalog contains over 100 PROJECT-PAKs of projects originally built in WOOD Magazine. Send today and enjoy hassle free woodworking. Catalog. HERITAGE BUILDING SPECIALTIES. $1.00 (Refund w/ purchase). *Circle No. 550.*

STEVE H. WALL LUMBER CO—Quality hardwoods and woodworking machinery for the craftsman and educational institutions. 16-page catalog lists 17 species of popular hardwoods at wholesale prices. Also dealers for MiniMax, Freud and ProCut woodworking machines. STEVE H. WALL LUMBER CO. $1.00. *Circle No. 592.*

EXOTIC IMPORTED AND DOMESTIC HARDWOODS—Over 75 species of lumber, bowl blanks, turning squares and veneer. Samples (½" x 3" x 6") ideal for craftsmen, furniture and cabinet makers, architects, and designers available. Catalog provides common and botanical name, source, and description of each wood. Send for catalog. WOODWORKERS SOURCE. $1.00. *Circle No. 598.*

VIDEOS

LAGUNA TOOLS VIDEO—Learn why most European workshops are using a central machine center rather than separate machines. 90 min. video presentation of "The Intelligent One Man Shop. The Robland X 31". Send for video. LAGUNA TOOLS. $6.00. *Circle No. 615.*

GENERAL WOODWORKING CATALOGS

THE WOODTURNERS CATALOG—48 color pages of the finest woodturning tools, machinery and supplies available. Featuring Henry Taylor, Sorby, Richard Raffan and Dale Nish workshops. Catalog price refunded with order. CRAFT SUPPLIES USA. $2.00. *Circle No. 830.*

MASTER TOOLS CATALOG—1992-93 236-page master woodworking tools catalog. Full line of the best hand tools, power tools & accessories, machinery, glues, finishing supplies, workbenches, and much more. Hundreds of books included. All four-color. Lots of technical information. GARRETT WADE CO. $4.00. *Circle No. 855.*

GRIZZLY IMPORTS, INC.—1993 is our 10th year of providing woodworkers with an incredible selection of machines, tools and accessories at prices you can afford. Send for your free 1993 catalog today and celebrate with tremendous savings on all your woodworking needs. GRIZZLY IMPORTS INC. Free. *Circle No. 860.*

MINI POWER TOOL CATALOG—Designed for easy reference, Ryobi's "shirt pocket" Power Tool Catalog includes our complete line of power tools, categorized by type: bench top, cordless, hand-held and stationary models. It features individual tool photographs with specifications and clear descriptions that offer specific uses and benefits. Accessories are also listed. Send for catalog. RYOBI. Free. *Circle No. 925.*

KITS

OUR QUEEN ANNE FURNITURE KITS—are ready to assemble and finish. They include dining room table, chairs, hutch, sideboard, a variety of occasional tables, and a personal desk. All are made in solid cherry, oak, walnut, and mahogany. We also stock individual Queen Anne legs for every project. Complete information in our brochure packet. ADAMS WOOD PRODUCTS. Free. *Circle No. 1002.*

DO-IT-YOURSELF KITS—Choose from a large selection of grandfather, wall and mantel clocks, as well as elegantly styled accent furniture pieces. Kits are made of solid ¾" hardwoods, primarily cherry, oak, and black walnut. Buy direct from the factory and save. Send for 36 page color catalog. EMPEROR CLOCK CO. $1.00. *Circle No. 1030.*

ATTENTION WOOD READERS—If you want to spend more time in your wood shop and less time shopping for wood, PROJECT-PAK is for you! Our catalog contains over 100 PROJECT-PAKs of projects originally built in WOOD Magazine. Send today and enjoy hassle free woodworking. Catalog. HERITAGE BUILDING SPECIALTIES. $1.00 (Refund w/ purchase). *Circle No. 1040.*

SHIP MODELING CATALOG—Historic Ship Models—Museum quality replicas you build yourself. Pre-cut wooden parts, metal and brass fittings, cloth sails, plans and instructions. Send for 80 page color catalog. MODEL EXPO, INC. $1.00. *Circle No. 1075.*

CANOES—Are you looking for a unique Do-It-Yourself Project? Are you tired of incomplete, hard to understand instructions? Then look no further. Build a beautiful Cedar Strip Canoe following our complete instructional video. All you need are simple tools, 60–80 hours and basic woodworking experience. Send for brochure. PALEO CANOE. 50¢. *Circle No. 1083.*

PUBLICATIONS

WOODTURNERS! THE AMERICAN ASSOCIATION OF WOODTURNERS CAN HELP YOU!—Join over 3,600 woodturners who are already members. You will receive: a quarterly journal filled with woodturning articles, tips, and projects; a directory of AAW members, local chapters, instructors, and suppliers; information about national symposiums. Send for information. AMERICAN ASSOCIATION OF WOODTURNERS. $1.00. *Circle No. 1110.*

SHOP ACCESSORIES

WOOD MOISTURE METER—Insure the quality of every project by using a wood moisture meter. Delmhorst Model J-88 is ideal for a woodworking shop or the serious craftsman. Easy to read LED display indicates 10 ranges of moisture content between 6% & 20%. Send for catalog on our complete line of wood moisture meters. DELMHORST INSTRUMENT CO. Free. *Circle No. 1217.*

LUMBER DRYING SYSTEMS—Ebac Lumber Dryers offers a wide variety of sizes from 50 B.F. to over 10,000 B.F. Three models are priced under $3000. You get the highest quality lumber dried down to 6% – 8% moisture content. Our controllers make them easy to operate and energy efficient. Kiln construction guide included to build your chamber. EBAC LUMBER DRYERS. Free. *Circle No. 1228.*

ECON-ABRASIVES—manufactures abrasive belts up to 52" wide in any grit. We carry hundreds of woodworking related accessories including: Velcro® backed discs, bar clamps, wood glue, drawer slides, chisels, hinges and hundreds of sanding accessories. Send for our 1992 catalog. ECON-ABRASIVES. Free. *Circle No. 1229.*

EASY DOES IT—with HTC'S power tool accessories. Discover many unique items, designed only with you, the dedicated woodworker, in mind. Make your machinery safer, increase the working area of your shop and accomplish nearly impossible tasks easily, quickly, accurately. Full-line catalog and price list. HTC PRODUCTS, INC. Free. *Circle No. 1245.*

ROUTER SPEED CONTROL—Reduces speed electronically without reducing torque. Route at the speed that gives best results with the wood and bit you are using. Speed adjustable from full speed to 0 RPM. Less tear out—stops burning—less wear on bits— easy to use. Send today for information. MLCS LTD. Free. *Circle No. 1251.*

WHOLESALE SANDPAPER, BELTS, SHEETS, CLOTH & PAPER DISCS—for orbital sanders. Shop rolls, flap wheels, hot melt glue sticks, dust masks, scuff pads, tack cloths, tape, wipers, etc. Supergrit offers quality abrasive and refinishing products at wholesale prices directly to the consumer. $25.00 minimum order. Prompt, free UPS shipment to most areas. 20 page catalog. RED HILL CORP. Free. *Circle No. 1267.*

ROTO CARVE—AMERICA'S MOST UNIQUE CARVING MACHINE—Now you can duplicate 3 dimensional patterns with extreme accuracy using **ROTO CARVE** and your table saw. Many shapes from round to square or tapered, without time consuming setup changes. Furniture restoration or reproduction, gun stocks, decoys, lamp bases are a few of the items produced on the **ROTO CARVE**. Free brochure. ROTO CARVE. Free. *Circle No. 1270.*

SAND-RITE CONTOUR SANDER—Unlimited in their use throughout the woodworking industry. Air-inflated drum conforms to the shape of the work. Eliminates tedious hand sanding. Catalogue. SAND-RITE MFG. CO. Free. *Circle No. 1274.*

BITS, BLADES, CUTTING TOOLS

CASCADE TOOLS—The 1993 Cascade Tools catalog is the finest ever. It's jammed with great buys on SY brand industrial-grade router bits, shaper cutters and an excellent assortment of hard-to-find accessories. You'll have to see it to believe it. CASCADE TOOLS, INC. Free. *Circle No. 1315.*

1992 EAGLE AMERICA WOODWORKING CATALOG—All new 1992 woodworking catalog featuring over 2,000 products. Includes a wide size and style assortment of router bits, shaper cutters, brad point drills, forstner bits, plug cutters, counterbores and sinks, rosette cutters, and many other hard to find and exclusive "Made in America" items. EAGLE AMERICA CORP. Free. *Circle No. 1320.*

FREUD—Premier line of carbide-tipped sawblades, router bits, shaper cutters and other woodworking tools, Freud offers a full-line on anti-kickback carbide-tipped router bits. Send for a free new router bit catalog. FREUD. Free. *Circle No. 1321.*

TO ORDER THESE BOOKLETS, USE COUPON ON PAGE 86

SUPER-SMOOTH, EXTRA-DURABLE, CARBIDE-TIPPED CIRCULAR SAW BLADES—Get a smooth-as-sanded surface with our all-purpose 40-tooth Woodworker Blade. You will be able to rip and cross-cut 1 – 2 in. rock hards and soft woods with an unbelievably smooth finish. You will also be able to cross-cut oak and birch ply-veneers with no bottom splinters. Send today for our information pack. FORREST MFG. CO., INC. $1.00. *Circle No. 1322.*

THE SOURCE FOR KNIFEMAKING SUPPLIES—We have PRE-SHAPED Blades, Rivets, Handle Materials, Baldor buffers and grinders, Polishing Wheels and Compounds, Dremel tools and Accessories, Belt Grinders and Abrasive Belts, Starrett Precision Tools, Files, Punches, Drill Bits, Panavise and Panapress, Woodcarving Tools and much more! Send for our Complete line catalog and we will include our "KNIFE-MAKING PROJECT" booklet at no extra charge. JANTZ SUPPLY. $3.00. *Circle No. 1330.*

PRODUCTION QUALITY CARBIDE TIPPED ROUTER BITS—MLCS Ltd. has a new 32-page catalog featuring hundreds of high quality carbide tipped router bits, shaper cutters, the Router Speed Control, the "Merle Adjustable Corner Clamp," plus other Professional Woodworking Products. Prices 50% to 70% lower than elsewhere. Value, quality and prompt service guaranteed! MLCS LTD. Free. *Circle No. 1350.*

HARDWARE/WOOD PARTS

HARDWARE CATALOG—A unique 48-page catalog of the very finest in classic, traditional solid brass cabinet hardware. All of British or No. American manufacture. Double & single post handles, knobs, escutcheons, standard & specialty hinges, box hardware, brass screws, castors, latches, catches, locks, and more. GARRETT WADE CO. $3.00. *Circle No. 1427.*

INCOME OPPORTUNITIES

MAKE MONEY IN FURNITURE RESTORATION THE MINUTEMAN WAY—Earn $200-$1000 per day stripping, repairing, refinishing, mirror resilvering, and/or veneering, at home or in shop, spare time or full time. We provide complete training; no experience necessary. Free workshop teaches you latest in furniture restoration. You have to see it to believe it! Business preview video $19.95. Send for catalog. MINUTEMAN. $2.00. *Circle No. 1661.*

MISCELLANEOUS

MECHANISMS FOR MAKING WOODEN BARREL PENS—Pencils/Roller Ball Pens/Fountain Pens. High quality. Low prices. Wholesale/Retail. Plus other related items. BEREA HARDWOODS CO. $1.00. *Circle No. 1900.*

HVLP & AIRBRUSH SPRAYING—Award winning HVLP technology available in touch-up spray gun. Lightweight (10 oz.) design complies with current regulations. Available in siphon, pressure, and gravity feed models. Also, a full line of airbrushes and accessories. Products range from tiny color cups and bottles to complete airbrush outfits and compressors. BINKS MFG. CO. $1.00. *Circle No. 1905.*

DELPHI STAINED GLASS—80-page color catalog of stained glass and related supplies. Beveled glass, hard-to-find tools, hundreds of unique patterns, kits, books, videos, and lots more. For 18 years, we've supplied both hobbyists and professionals with quality products, friendly advice, and fast 24-hour shipping. All products guaranteed 100%. DELPHI STAINED GLASS. $4.50. *Circle No. 1920.*

DRAW & SAW—quick and easy new method of tracing and upscaling patterns with adhesive film imprinted with ¼ – 1" grid lines. No more messy glues, expensive enlargements or pattern shifting; leaves no residue or pattern lines. Draw & Saw adheres to all woods, accepts pen, pencil or print directly on it thru a copier machine. Great with scroll, jig or band saws. Saves time and eliminates extra tracing. Send for 9 x 12" sample and product information. GRAPHIC ARTS SYSTEMS. $1.00. *Circle No. 1950.*

ARMRESTS FOR YOUR CAR—Add a TracTop® sliding cushion front center armrest with pullout tray. Models for foreign and domestic bucket seat cars, Honda, Saab, Audi, Ford, GEO, Volvo, etc. Color choices. #1 worldwide for 12 years! HUSCO ENGINEERING. $1.00. *Circle No. 1960.*

SUPER BINDER—stops cord hassle. Strong nylon loop attaches to item. Wrap 2-ply Velcro strap around coil either way to secure. Pull thumb tab to release. Weatherproof. Durable. Send for free brochure. MEGA-MARK PRODUCTS CO. Free. *Circle No. 1980.*

STEELMASTER BUILDINGS—are available in almost any size for almost any use. From 10' to 100' wide and any length imaginable. Whether you need a back yard shop... an industrial shop... equipment storage building... whatever your requirements, you'll find a Steelmaster that's just the right size for the job. Our buildings are so easy to construct, most owners opt to construct their buildings themselves which adds up to even bigger savings. Send for information. STEELMASTER. $1.00. *Circle No. 2030.*

IF YOU ARE INTERESTED IN RESTORING ANTIQUES—this 264-page catalog packed with unusual, hard-to-find items is just for you. Included are hundreds of essential items for antique restoration including top quality brass reproduction hardware, oil lamps and accessories, numerous wood component repair parts and kits, caning and basketry supplies, everything needed for wood refinishing, related tools, books, and a complete line of upholstery equipment and supplies. All at wholesale prices. Send for this informative catalog. VAN DYKE'S RESTORERS. $1.00. *Circle No. 2077.*

LEGAL IVORY—Virtually identical to animal ivory. Tagua is the nut from a tropical palm tree. Ideal for jewelry, knobs, small turnings, inlay, or scrimshaw. Available in 3 sizes. Send for information. WOODWORKERS SOURCE. Free. *Circle No. 2090.*

'THE WOODWORKING SHOWS' MACHINERY, TOOLS AND SUPPLIES—Hundreds of products for the woodworker demonstrated and sold at discount prices at every 'Woodworking Show'. In-depth seminars and free workshops on a variety of woodworking topics. Shows are scheduled in 27 cities. Send for free brochure. 'THE WOODWORKING SHOWS'. Free. *Circle No. 2095.*

CARVING SUPPLIES

WOOD CARVING MACHINES AND ACCESSORIES—make all types of wood carving easy, fun and profitable. The machines do the work. Whether for sign carving, flat 3-D, decoys, panels, gun stocks or furniture, we have the proper machine for the job. Professional woodcarving for the hobbyist and superior quality for the professional. Begin your hobby or full or part-time business by ordering our catalog and price list. MARLIN INDUSTRIES. $1.00. *Circle No. 2150.*

ELECTRIC WOOD CARVING TOOLS—Sugino Auto-Mach electric carving tool chisels wood at up to 10,000 VPM. Safe, lightweight, easy-to-use, the pressure-activated head controls carving speed and depth, speeds carving faster than mallet and chisel methods. Professional quality suitable for novice and journeyman carver. Wide variety of hardened steel cutting blades. Operates on household current. SUGINO CORP. Free. *Circle No. 2170.*

WOODCARVING TOOLS—Whittlers and carvers—Warren Tool Co. offers a complete catalog of whittling and carving, hand/power tools, sharpening aids, wood cut-outs, and related wood carving supplies. WARREN TOOL CO., INC. $1.00. *Circle No. 2185.*

CLAMPS

MERLE ADJUSTABLE CORNER CLAMP—Quick & easy to use. It forces your work into square. Fully adjustable from 2⅝" x 2⅝" to 69" x 69" in. Perfect for clamping picture frames, cabinets, or anything that requires 90° corner clamping. The Merle Clamp is cast aluminum & steel construction, a true industrial quality tool. Send today for information. MLCS LTD. Free. *Circle No. 2250.*

FASTENING PRODUCTS

SQUARE DRIVE SCREWS—Thousands agree—once you try them you will never want to use anything else! The square drive recess virtually eliminates work-damaging driver bit "cam-out," the deep threads result in exceptional holding power, and they are heat treated for strength. Sizes from #4 x ⅜" to #12 x 4", with stainless steel, solid brass, brass plated, and zinc plated available. Quantity discounts. Send for literature. McFEELY HARDWOODS. $1.00. *Circle No. 2450.*

Worth writing for...

Better Homes and Gardens®
WOOD Magazine, June 1993
Dept. JNWO93
P.O. Box 2713
Boulder, Colorado 80329–2713

TO ENSURE PROMPT HANDLING OF YOUR ORDER FOLLOW THESE INSTRUCTIONS:

- **Circle your choice**
- **Enclose check or money order for cost of booklets plus $2.00 service charge (no stamps accepted)**
- **NO FOREIGN ORDERS ACCEPTED**
- **Send coupon and remittance to address above**
- **ALLOW 4-6 WEEKS FOR DELIVERY**
- **Coupon expires June 13, 1994**

WOOD SUBSCRIPTION

1. A 1 year WOOD subscription (9 issues) for $24.97 (U.S. price)—a $10.58 savings off newsstand rate. Allow 6-8 weeks for first issue. Be sure to include payment with total below. NO FOREIGN ORDERS ACCEPTED ON THIS COUPON; please contact Subscription Dept. directly.

Circle numbers below corresponding to items in this issue. Please include $2.00 for handling charge.

3.....$2.00	77 .....Free	328.....$1.00	592.....$1.00	1110.....$1.00	1322.....$1.00	2077.....$1.00
6.....$3.00	78.....$1.00	340.....$1.00	598.....$1.00	1217 .....Free	1330.....$3.00	2090 .....Free
15 .....Free	82.....$1.00	345.....$3.00	615.....$6.00	1228 .....Free	1350 .....Free	2095 .....Free
33.....$1.00	84 .....Free	360.....$1.00	830.....$2.00	1229 .....Free	1427.....$3.00	2150.....$1.00
35 .....Free	86 .....Free	395.....50¢	855.....$4.00	1245 .....Free	1661.....$2.00	2170 .....Free
37.....$1.00	92.....$1.00	401.....$2.00	860 .....Free	1251 .....Free	1900.....$1.00	2185.....$1.00
44 .....Free	94.....$2.00	445.....$2.00	925 .....Free	1267 .....Free	1905.....$1.00	2250 .....Free
48.....$1.00	100.....$1.00	465.....$1.00	1002 .....Free	1270 .....Free	1920.....$4.50	2450.....$1.00
49 .....Free	160.....$1.00	480.....$1.00	1030.....$1.00	1274 .....Free	1950.....$1.00	
57 .....Free	190.....$1.50	510.....$1.00	1040.....$1.00	1315 .....Free	1960.....$1.00	
75 .....Free	200.....$1.00	512 .....Free	1075.....$1.00	1320 .....Free	1980 .....Free	
76 .....Free	310.....$2.00	550.....$1.00	1083.....50¢	1321 .....Free	2030.....$1.00	

Name (please print)_____
Address_____
City_____
State_____ Zip Code_____
Phone (Optional): ___ – ___ – _____

I AM ENCLOSING:

$_____ for priced items
$ 2.00 for handling
$_____ total remittance

ORDER 1-800-328-0457 MAIL ORDER HOURS M-F 7:00-5:30 C.S.T. SAT 8:00-1:00

DELTA TOOLS

Model		List	Sale
23-700	Wet/Dry Grinder	234	168
23-680	6" Bench Grinder 1/4 HP	88	75
23-580	6" Bench Grinder 1/2 HP	151	115
11-950	8" Drill Press	199	144
31-050	1" Belt sander 2.0 amp	104	78
31-460	4" Belt/Disc Sander	198	135
31-340	1" Belt/8" Disc Sander	268	195
31-080	1" Belt/5" Disc Sander	134	94
40-560	16" 2 speed Scroll Saw	266	188
11-980	12" Bench Drill Press	276	224
11-090	32" Radial Bench Drill Press	399	294
43-355	3/4" Shaper 1-1/2 HP	964	709
43-505	1/2" Bench Router/Shaper	399	279
22-540	12" Bench Top Planer	595	398
36-220	10" Compound Mitre Saw	350	239
28-180	Bench Band Saw	232	165
40-640	20" Bench Scroll Saw	466	318
23-675	NEW 6" Grinder/3x24Belt Sndr	141	105
14-600	Hollow Chisel Mortiser	668	448
46-700	12" Wood Lathe	548	434
34-761	10" Unisaw 1-1/2 HP	1715	1450
	Unisaw has $100 rebate-price is before rebate		
33-990	10" Radial Arm Saw	818	625
37-280	6" Motorized Jointer	488	399
50-179	3/4 HP 2 stage Dust Collector	483	335
70-200	20" Floor Drill Press	1049	815
33-055	8-1/4" Sawbuck comp w/legs	865	595
34-330	8-1/4" Table Saw 13A	343	234
32-100	Station Plate Jointer	645	358
36-040	8-1/4" Compound Mitre Saw	224	165
34-915	30" Unifence	385	239
34-897	50" Delta Unifence	525	285
36-755	10" Tilt Arbor Saw	1264	950
34-444	Contractors Table Saw	850	615
17-900	16-1/2" Floor Drill Press	495	399
40-601	18" Scroll Saw with stand	942	745
22-562	13" Planer complete - 2HP	1498	1229
33-060	NEW "Sidekick" Miter Saw	499	368
14-070	NEW 14" Floor Drill Press	450	335
50-075	Dust Collector/Sweeper 3/4 HP	360	245
28-283	14" Band Saw w/enc. stand	910	739
34-445	34-444 Saw w/30" Unifence	1200	769
37-154	DJ15 6" Jointer w/3/4HPmotor	1420	1160

MILWAUKEE TOOLS

6527	NEW Sawzall with case	299	164
6528	above Sawzall w/wired cord	295	164
6125	NEW 5" Random Orbit Sander	200	119
6126	NEW 6" Random Orbit Sander	265	125
0399-1	12V cordless Drill Kit comp	304	164
0402-1	above Drill w/keyless chuck	309	168
0395-1	9.6V cordless Drill with case	284	155
0224-1	3/8" Drill 4.5A mag reversing	203	114
0234-1	1/2" Drill 4.5A mag 0-850 rpm	223	119
0244-1	1/2" Drill 4.5A mag 0-600 rpm	223	119
0222-1	3/8" Drill 3.5 amp 0-1000 rpm	189	107
0228-1	3/8" Drill 3.5 amp 0-1000 rpm	189	100
0375-1	3/8" close quarter Drill	223	127
0379-1	1/2" close quarter Drill	254	145
6539-1	cdls Screwdriver 100 rpm	127	75
6546-1	cdls Screwdriver 200 & 400 rpm	138	82
6389	1/2" D-handle Hammer Drill Kit	319	184
6750-1	Drywall Gun 0-4000 5 amp	152	93
6507	Original SawZall with case	249	135
6014	Orbital Sander 1/2 sheet	214	118
6977	variable-temp Heat Gun	122	74
5397-1	3/8" var. spd Hammer Drill Kit	242	138
5371-1	1/2" var. spd Hammer Drill Kit	335	185
5377-1	5371-1 w/keyless chuck	335	185
2107-1	1/2" v/spd right angle Drill Kit	370	199
6754-1	Drywall Gun 0-4000 5.4 amp	192	108
3300-1	1/2" var. spd right ang Drill	329	184
5680	Router 2 HP - 12 amp	395	198
0235-1	1/2" Drill w/keyless chuck	223	125
6146	4-1/2" Grinder 10,000 rpm	182	98
6142	6146 with case & accessories	199	129
6749-1	Drywall Gun 0-2500 5.4 amp	224	122
6365	7-1/4" Circular Saw 13 amp	214	120
6366	6365 w/case & carbide blade	234	125
6268	6365 w/no cord, blde & case	244	138
6969	New 7-1/4 Circ saw w/brake	245	149
6377	7-1/4" Worm Drive Saw	324	178
6256	Top Handle Jig Saw	220	142
6450	10" Mitre Saw	484	269

FREUD CARBIDE TIPPED SAW BLADES

5/8" Bore - Industrial Grade

Item	Description	Teeth	List	Sale
LU72M010	Gen Pur A TB 10"	40	67	39
LU82M010	Cut-off 10"	60	90	49
LU84M011	Comb 10"	50	76	40
LU85M010	Super Cut-off 10"	80	112	58
LM72M010	Ripping 10"	24	66	37
LU73M010	Cut-off 10"	60	82	44
LU87M010	Thin Kerf 10"	24	70	38
LU88M010	Thin Kerf 10"	60	86	43
LU98M010	Ultimate 10"	80	125	65
LU91M010	Comped Mitre 10"	60	60	54
SC-001	Blade Stabilizers (pair) for 5/8" arbor		11	99
TK206	10" Framing	24	38	25
TK303	7-1/4" Finishing	40	37	22
TK305	10" Finishing	40	46	25
TK905	10" Combo	50	52	25
SD306	6" Dado - Carbide		215	109
SD308	8" Dado - Carbide		229	119
F0	1-3/4" x 5/8" Biscuit 1000 Qty		32	29
F10	2-1/8" x 5/8" Biscuit 1000 Qty		32	29
F20	2-3/4" x 5/8" Biscuit 1000 Qty		34	29
FA	Assorted Biscuits 1000 Qty		34	29
FB100	16 piece Forstner Bit Set		331	174
94-100	5 pc. Router Bit Door System		319	159

The following FREUD Tools have a $20.00 rebate! Price shown is before rebate.

FT2000E	3-1/4 HP v/spd Plunge Router	410	199
JS100	Biscuit Jointer with case	334	162

MAKITA TOOLS

Model		List	Sale
6070DW	3/8" v/spd Reverse Drill 7.2V	124	74
6071DWK	above Drill w/removable batt.	194	108
5080DW	3-3/8" Saw Kit 9.6 volt	250	138
6010SDW	3/8" cordless Drill Kit 7.2V	96	59
ML900	Incandescent Flashlight 9.6V	Sale	37
6093DW	v/spd Drill w/clutch-complete	261	135
6093DWE	6093DW Drill Kit w/2 batteries	270	139
6095DWE	6095DW Drill Kit w/2 batteries	270	139
6011DW	NEW 12V Drill Kit complete	320	168
632007-4	9.6 volt Battery	47	30
632002-4	7.2 volt Battery	39	28
5007NBA	7-1/4" Saw w/electric brake	243	125
5008NBA	8-1/4" Saw w/electric brake	301	163
BO4510	1/4 sheet Pad Sander	93	54
9900B	3" x 21" Belt Sander w/bag	283	145
9924DB	3" x 24" Belt Sander w/bag	299	159
4301BV	Orb. var. spd Jig Saw 3.5A	262	142
JR3000V	var. speed Recip Saw w/case	239	125
LS1020	10" Mitre Saw 3.5 amp	571	299
9820-2	Blade Sharpener	394	194
1900BW	3-3/4" Planer with case	221	116
1911B	4-3/8" Planer 7.5 amp	255	138
9207SPC	7" Sander/Polisher	294	154
9546B	4" Disc Grinder 4.6 amp	100	65
3601B	1-3/8 HP Router	261	139
BO4550	1/4 sheet Pad Sander w/bag	91	54
DA3000R	3/8" Angle Drill	285	149
2708W	8-1/4" Table Saw	519	259
2711	10" Table Saw with brake	858	485
6404	3/8" Drill Rev. 0-2100 rpm 2.4	105	57
6510LVR	3/8" Drill Rev. 0-1050 rpm	152	79
6820V	0-4000 rpm Drywall Gun 5.2	A160	89
6013BR	1/2" Drill Rev. 6 amp	263	138
5402A	16" Circular Saw 12 amp	675	345
3612BR	3 HP Plunge Router	347	169
9401	4" x 24" Belt Sander w/bag	343	174
4302C	var. speed Orbital Jig Saw	283	169
5077B	7-1/4" Hypoid Saw	260	138
LS1030	NEW 10" Mitre Saw	428	195
5007NB	7-1/4" Circular Saw 13 amp	214	114
2012	12" Portable Planer	913	465
LS1011	10" Slide Compound Saw	859	498

SIOUX TOOLS

9030	New 3/8" var/spd Drill	238	148
8000	3/8" var/spd close qtr Drill	201	128
690	5" Air Random Orbit Sander	139	138
690VV	690 w/Venturi dust collection	281	178
656	5" Air Random Sander-dual action	261	158

SENCO AIR NAILERS

SFN1	Finishing Nailer 1" - 2"	377	255
SFN2	Finish. Nailer 1-1/2" - 2-1/2"	571	375
SN325	Nailer 1-7/8" - 3-1/4"	665	395
SN4	General purpose 2" - 3-1/2"	885	468
SLP20	New Pinner w/case 5/8" - 1-5/8"	399	269
SK5	Stapler 5/8" - 1-1/2"	351	239

BOSTITCH AIR NAILERS

N80S-1	Slick Nailer Super Sale		355
N12R-1	Coil Roofing Nailer	845	409
N60FN-2	Finishing Nailer	625	329
T31	Brad Nailer	270	149
CWC100	1 HP Pancake Compressor	445	289

EXCALIBUR Fences & Tables

TT45R24L9	24" Fence	369	299
TT45R50L12	50" Fence	399	329
EXSLT30	Sliding Table	599	475
EXSLT60	Sliding Table	745	585

SKIL SIZZLERS

77	7-3/4" Worm Drive Saw	230	138
2735-04	12 volt cordless Drill Kit	210	132
2735-04X	2735-04 with keyless chuck	235	132
1605-02	NEW Biscuit Jointer w/case	200	125
3400	10" Table Saw - Bench Top	250	179
3330	16" Scroll Saw - Bench Top	200	135
3350	8" Drill Press - Bench Top	200	135

PANASONIC CORDLESS

EY6209BC	NEW variable speed 12 volt Drill w/15 minute charger & case	390	179
EY6281BC	NEW variable speed 9.6 volt Drill w/1 hr minute charger & case	350	158
EY571B	var. speed 9.6 volt Drill Kit	299	134
EY571BC	EY571B with case & 2 batt	275	145
EY6207BC	NEW 12 volt 1/2" Drill w/keyless chuck var. speed w/15 minute charger & case	421	218
EY6205EOK	Same as EY6205BC but battery has 40% more life & 20% more torque	398	189

PASLODE IMPULSE GUNS

IM250	Impulse Finish Nailer Kit	849	615
IM325	Impulse Framing Nailer Kit	849	615
402500	Extra Battery	Sale	42.95

HITACHI TOOLS

C7SG	7-1/4" Circular Saw	214	109
C7BD	7-1/4" Circular Saw with brake	230	118
M12V	NEW 3 HP var. speed Router	447	225
TR12	Plunge Router 3 HP	354	167
F1000A	12" Planer/6" Jointer	2635	1549
C10FA	10" Deluxe Mitre Saw	538	268
C12FA	NEW 12" Mitre Saw	632	298
C8FB	8-1/2" Slide Compound Saw	899	445
FREUD LU91M008	8-1/2" Carb. blade	461	68
C15FB	15" Mitre Saw	745	368
FREUD LU85M015	15" Carbide 108 tooth	180	99

Weingw stock Hitachi Air Nailers!

1993 TOOL CATALOG AVAILABLE
Call Toll-Free 1-800-328-0457 In Minn. Call (612)224-4859
FAX: (612)224-8263
CHECK • MONEY ORDER • VISA • MASTERCARD • DISCOVER
SEVEN CORNERS ACE HDW. Inc.
216 West 7th St. • St. Paul, MN 55102 • Est. 1933

Up to 6% cash rebate on your purchases!

$600.00 - $999.99 Receive a 2% Rebate Check

$1,000.00-$1,499.99 Receive a 4% Rebate Check

$1,500.00-$2,999.99 Receive a 5% Rebate Check

over $3,000.00 Receive a 6% Rebate Check

DELTA #34-080 10" MITRE BOX XTRA SPECIAL 198.00

TOOLS ON SALE™
AMERICA'S LOWEST PRICED TOOLS
FREE FREIGHT TO THE 48 CONTINENTAL STATES ON EVERY ITEM
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

DEWALT TOOLS

DW364	7-1/4" Circ. Saw w/brake 13 A	245	145
DW945K	3/8" 12 volt cordless Drill Kit with 2 batteries	284	169
DW944K	3/8" 9.6 volt cordless drill kit with 2 batteries	264	149
DW610	1-1/2 HP 2 handle Router	250	138
DW411	1/4 sheet Palm Sander, 1.7 amp	87	54
DW100	3/8" Drill, 4 amp 0-2500 rpm, rev	110	65
DW510K	1/2" v/spd Hammer Drill w/case	288	185
DW682K	NEW Biscuit Joiner with case	428	225

PORTA NAILER

401	Porta Nailer complete	265	198
501	Face Nailer complete	265	195

WERNER LADDERS

6204	4' Fiberglass	179	65
6205	5' Fiberglass	199	75
6206	6' Fiberglass	215	80

SUMMER KIT SPECIALS

9852K	Porter Cable 9852 Drill Kit w/extra batt		185
9853K	Porter Cable 9853 Drill Kit w/extra batt		175
7336K	Porter Cable 5" var. spd Random Orbit Sndr w/case & 1 roll 100X & 150X discs	273	159
7336K	Porter Cable 6" var. spd Random Orbit Sndr w/case & 1 roll 100X & 150X discs	278	165
555K	Porter Cable Plate Biscuit Jointer with case & 1000 assorted biscuits	339	195
JS100K	Freud Jointer w/cs & 1000 biscuits	351	188
1581VSK	Bosch Top Handle Jig Saw with case & 30 Bosch blades	305	182
1582VSK	Bosch CLIC Barrell Grip Jig Saw with case & 30 Bosch blades	305	182
JM100K	Ryobi Joiner w/1000 biscuits	475	232

BIESMEYER FENCES

B-50	50" Commer. Saw Fence	329	294
T-SQUARE 52	52" Homeshop Fence	249	234
T-SQUARE 40	40" Homeshop Fence	242	208
T-SQUARE 2828	28" Homeshop Fence	230	198

WEDGE SMART LEVEL

SM-PR2	2 FT Level with sensor	120	88
SM-PR4	4 FT Level with sensor	150	105
SM-PR6	78" Level with sensor	180	139
SERIES200	NEW 2FT Level with sensor		55

Msx638	FEIN Electric Oscillating Triangle Sander Kit	Sale	279
LPN672	PONY Air Palm Nailer w/glove	Sale	94.99

JORGENSEN ADJUSTABLE HANDSCREWS

Item#	Jaw Length	Jaw Open	List	Sale	Box of 6
#0	8"	4-1/2"	19.00	11.89	61.00
#1	10"	6"	21.76	12.89	70.65
#2	12"	8-1/2"	24.95	14.95	80.95
#3	14"	10"	31.61	18.95	104.95
#4	16"	12"	42.30	24.95	143.95

JORGENSEN STYLE 37 2-1/2" Throat 1/4"x3/4"

Item#	Jaw Length	List	Sale	Box of 6
3706	6"	9.66	6.25	34.75
3712	12"	10.92	6.75	37.75
3718	18"	12.06	7.25	40.75
3724	24"	13.16	8.19	43.75
3730	30"	14.70	9.10	49.75
3736	36"	16.05	10.19	55.75

PONY CLAMP FIXTURES

Model		List	Sale	Lots of 12
50	3/4" Black Pipe Clamps	13.61	7.89	84.99
52	1/2" Black Pipe Clamps	11.37	6.50	69.50

BOSCH

1581VS	Top Handle Jig Saw	265	138
1582VSC	NEW CLIC Barrell Jig Saw	265	138
Bosch Metal Case for above Jig Saws		34	32
Bosch 30 blade assortment for Jig Saws			26.99
1942	Heat Gun 600° - 900°	111	69
1272D	3" x 24" Belt Sander with bag	329	178
1273D	4" x 24" Belt Sander with bag	345	189
11-212VSR	Bulldog 3/4" SDS Rtry Drill	370	198
1347AK	4-1/2" Grinder w/case & access.	170	108
1348AE	5" Grinder 8.5 amp	195	118
1194VSR	1/2" var. speed Hammer Drill	284	145
1194VSRK	above Hammer Drill w/case	292	179
1608	5.6 amp Laminate Trimmer	149	84
1608K	Lam Installers Kit with 1609	309	175
1609KX	Deluxe Installers kit	361	198
1601	1 HP Router	184	105
1604	1-3/4 HP 2 Handle Router	236	134
1604K	same as above w/case & acc	287	165
1606	1-3/4 HP D-handle Router	273	158
3258	3-1/4" Planer w/blade guard	239	139
3258K	3258 Planer with steel case	265	154
3270D	3" x 21" Belt Sander with bag	260	145
1273DVS	var. spd 4" x 24" Belt Sander	370	193
1614	NEW 2HP Plunge Routes	220	128
1614EVS	NEW 1-1/2HP v/spd Plge Rtr	255	149
1613	NEW 1-3/4 HP Plunge Router	266	164
1613EVS	NEW 2HP v/sp Plunge Router	320	184
1615	NEW 3 HP, Plunge Router	395	228
1615EVS	NEW 3 HP v/spd Plge Router	460	244
1632VSR	K Recip Saw & 4A orb v/spd	225	145
3450VSR	K 0.6V cdls v/sp Drill Kit comp	256	138
3051VSR	K 3050VSR K w/keyless chuck	266	145
1370DEVS	6" Random Orbit Sander	481	219
3283DVS	5" Random Orbit Sander	159	98
3283DVSK	3283DVS Kit complete	220	119

ELU BY BLACK & DECKER

Model		List	Sale
3338	2-1/4 HP v/spd Plunge Router	427	255
3304	1 HP var. spd Plunge Router	292	184
3875	3-1/8" Univ. planer 7.2 amp	313	155
3380	Biscuit jointer with case	542	248
4024	3 x 21 var. speed Belt Sander	322	184

BLACK & DECKER

1166	3/8" Drill 0-2500 rpm 4 amp	100	65
1703	10" Mitre Saw w/72-770 blde	313	179
4011	1/4 sheet Palm Sander	82	59
79-034	Workmate 400	175	105
2694	7-1/4" Super Saw cat	248	137
2695	8-1/4" Super Saw cat	271	153

DAVID WHITE

LP8-20	Sight Level package - 20x	310	198
L6-20	Meridian Level - 20x	290	189
LT8-300	Level Transit - 26x	650	445
LT8-300R	above Level w/optical plum	769	525
LT8-900	Level Transit - 20x	369	245
ALT8-900	Automatic Level - Transit - 18x	549	365
ALTP6-900	above Level w/tripod & rod	600	438
ALP6-18H	Above Level w/tripod and rod	550	372

RYOBI SPECIALS

JP-155	6-1/8" Jointer/Planer	511	295
TS-254	NEW 10" Mitre Saw	397	195
TS-254K	above Saw with acc. kit & B&D 73-770 carbide blade	495	245
AP10	10" Surface Planer 13 amp	820	358
RE600	3 HP Plunge Router	431	209
BE321	3" x 21" var. spd Belt Sander	272	135
SC160	NEW 16" Bench Scroll Saw	261	144
TFD220VRK	12V cordless Drill Kit	325	165
JM100K	NEW Biscuit Jointer w/case	431	204
RS115	NEW 4-1/2" v/sp Rdm Orb Sndr	134	74
BT3000	NEW 10" Table Saw	699	548
TSS220	NEW 8-1/2" Slide Comp. Saw	790	445
OS1000	NEW Detail Sander	80	55
RS112	NEW Palm grp Random Orb Sndr	80	59
AP12	NEW 12" Bench Planer	840	425

LAMELLO BISCUIT JOINTERS

TOP 10	"Simply the Best"	699	559
STANDARD 10	"Professionals Choice"	499	399
COBRA	NEW Biscuit Joiner	Special	299

QUAL-CRAFT PRODUCTS

2200	Pump Jack	79	59
2201	Pump Jack Brace	30	20
2203	Pump Jack guard rail holder	31	21
2204	Workbench & rail holder combo	53	39
	Buy any 6 (can be assorted) deduct additional 10%		
2601	Wall Jack	167	114
	Lots of 4 deduct additional 10%		

PORTER CABLE

690	1-1/2 HP Router 8 amp	240	134
9690	690 Router with steel case	306	149
691	1-1/2 HP Router D-handle	260	140
695	1-1/2 HP Router/Shaper	335	204
698	HD Shaper Table	185	123
351	3" x 21" Belt Sander w/o bag	245	140
352	3" x 21" Belt Sander with bag	255	144
360	3" x 24" Belt Sander with bag	320	179
361	3" x 24" Belt Sander w/o bag	310	169
362	4" x 24" Belt Sander with bag	345	188
363	4" x 24" Belt Sander w/o bag	330	183
315-1	7-1/4" Top Hdle Circular Saw	210	118
9315-1	315-1 comp. w/cs & carb bld	240	135
617	7-1/4" Pushhandle Saw	210	119
9617	617 comp. w/case & carb blde	240	135
214	4-1/2" Trim Saw	240	135
97751	1/2" v/spd Hammer Drill w/case	260	155
9629	Recip Saw var. speed & amp	250	144
9118	Porta Plane Kit 7 amp	360	198
505	1/2 sheet Pad Sander	210	116
6511	3/8" var. speed Drill 5.2 amp	200	116
6614	1/2" var. speed Drill 0-750 rpm	210	120
6615	7514 with keyless chuck	215	124
7549	Top handle Jig Saw 4.8 amp	250	145
330	Speed Block Sander 1/4 sheet	103	58
555	Plate Biscuit Jointer with case	315	168
345	6" Saw Boss 9 amp	180	102
9345	345 comp. w/case & carb blde	210	119
9647	TIGER CUB Recip. Saw	195	115
9637	Full var/spd Recip Saw & amp	250	138
7519	3-1/4 HP Router 2 Handle	410	224
7518	3-1/4 HP 5 speed Router	475	259
7538	3-1/4 HP Plunge Router	410	224
7399	5.6 amp Drywall Cutout Unit	140	82
7310	5.6 amp Laminate Trimmer	150	88
97310	Laminate Trimmer Kit comp	345	192
7334	5" Random Orbit Sander	210	119
7336	5" var. spd Rndm Orbit Sndr	230	129
7336	6" var. spd Rndm Orbit Sndr	235	134
73333	NEW Dust Collection system		24.50
693	1-1/2 HP Plunge Router Base	295	165
6931	Plunge Router Base	120	75
7539	3-1/8HP var/spd Plunge Router	475	259
9852	12V 3/8" Drill w/case 0-1000 rpm	270	149
9853	9852 with keyless chuck	270	149
9854	12V 1/2" Drill w/case 0-360 rpm	280	155
6900	12V battery for above drills	Sale	39
	New Tools by Porter Cable		
332	Palm Grip Rndm Orbit Sander	109	64
333	above Sander with dust bag	125	74
352VS	3x21 Belt Sander w/bag v/spd	280	159
7116	24" Osmi Jig	470	288
334	333 Sander with PSA pad	125	74
550	Pocket cutter with case	330	185
7700	10" "Lazerloc" Miter Saw	634	345

Print this article

FORECAST WEATHER WITH A STICK

Every time Harley Refsal, our carving consultant, returns from a teaching stint in Norway, we expect to hear some folklore. Last time, it was the weather stick.

It seems that rural Norwegians have more faith in weather sticks than media forecasters. A glance out the window at the trusty predictor indicates rain or shine for the day ahead.

Made from a section of green branch cut from a live tree (the tree species doesn't matter) so as to leave one long twig attached (see *left*), the weather stick reacts to barometric pressure. When the twig's up, expect a clear, pleasant day; with the twig down, inclement weather's on the way. No incline, no change.

Environmentally correct wood

In its effort to alert woodworkers about the responsible use of often-endangered tropical hardwoods, the Woodworkers Alliance for Rainforest Protection (WARP) has urged the use of wood species new to the world timber trade. Termed "lesser-known species" (LKS), these woods are responsibly harvested on a sustained-yield basis by small rainforest cooperatives and marketed in the U.S. and elsewhere by environmentally sensitive companies or individuals. For a list of LKS wood species and who sells them, send a SASE to *WARP, Box 133, Coos Bay, OR 97420.*

Photograph: Fein Power Tools, Inc.
Illustrations: Jim Stevenson

First power tool honor claimed by Fein

Cris Cable, vice-president of marketing for Fein Power Tools, Inc., of Pittsburg, replied to our story in the December 1992 issue about Black & Decker's invention of the portable electric drill with a pistol grip. He enclosed the photo *right* of the world's first hand-held power tool, an electric drill developed by Wilhelm Emil Fein in Germany in 1895.

The direct-drive drill's chuck capacity was 3/16", it weighed 16½ pounds, and operated on DC current that was only available by plugging it into a light socket. Today, the family owned company, headed by Hans Wolfgang Fein, manufactures over 200 types of high performance power tools.

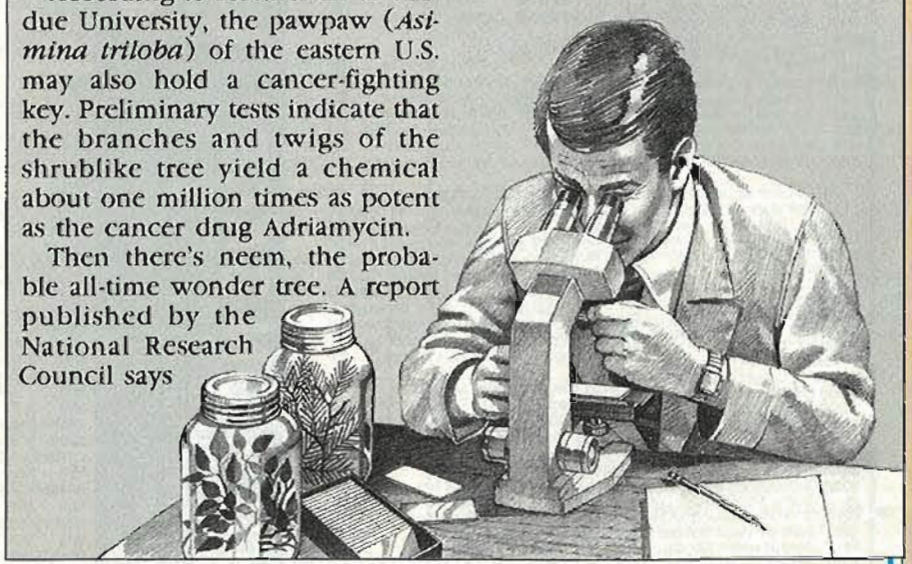
Fein's first-ever, hand-held power tool of 1895 weighed 16½ pounds.

OVERLOOKED TREES CATCH EYE OF SCIENCE

If you haven't heard, the yew tree (*Taxus brevifolia*) of the Pacific Northwest has risen to national prominence from its former lowly economic status. That's because Taxol, a drug derived from its bark, can treat certain types of cancer. With this find in mind, scientists now seem to be increasingly scanning the globe for new remedies from trees, and with some success.

According to researchers at Purdue University, the pawpaw (*Asimina triloba*) of the eastern U.S. may also hold a cancer-fighting key. Preliminary tests indicate that the branches and twigs of the shrublike tree yield a chemical about one million times as potent as the cancer drug Adriamycin.

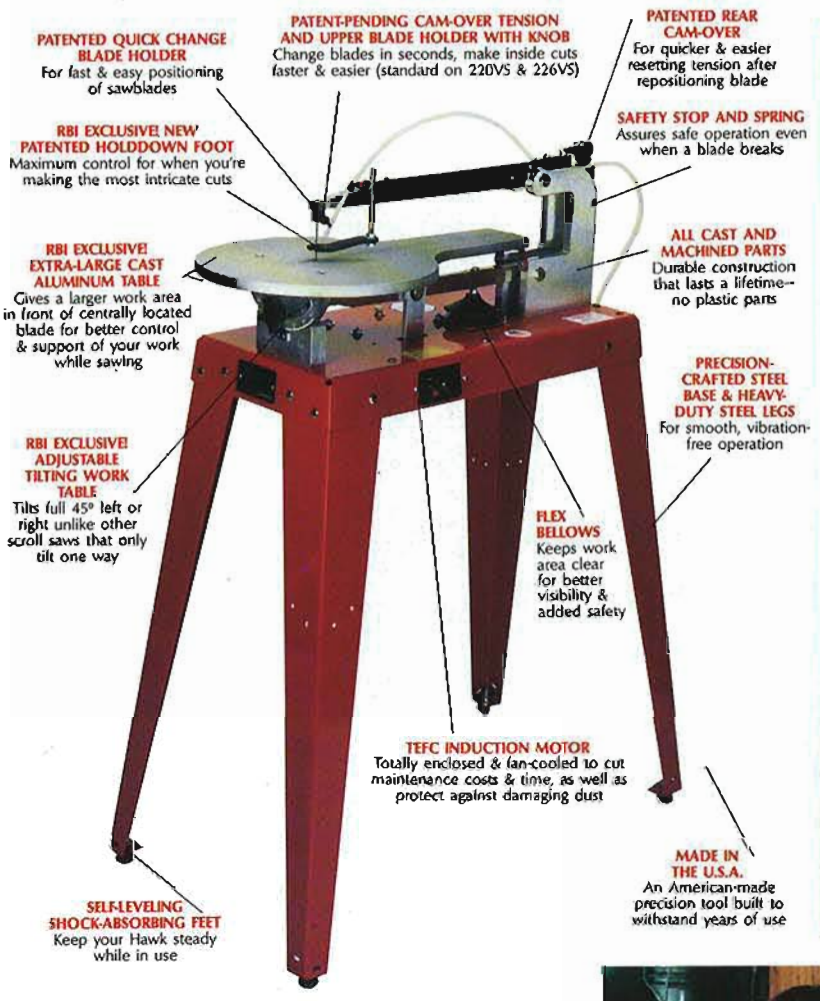
Then there's neem, the probable all-time wonder tree. A report published by the National Research Council says that the neem tree (*Azadirachta spp.*), of tropical America, could solve several of man's problems. Although the wood is used locally for furniture and cabinets, the leaves can produce pain-killing drugs and healing skin ointments. From its seeds come environmentally friendly insecticides. Even the tree's twigs, with one end fuzzed, prove to be decay-preventing toothbrushes!



The American Toolmaker

RBI Hawk Scroll Saws

13 REASONS WHY WE'RE #1


PATENTED QUICK CHANGE BLADE HOLDER
For fast & easy positioning of sawblades
PATENT-PENDING CAM-OVER TENSION AND UPPER BLADE HOLDER WITH KNOB
Change blades in seconds, make inside cuts faster & easier (standard on 220VS & 226VS)
PATENTED REAR CAM-OVER
For quicker & easier resetting tension after repositioning blade
SAFETY STOP AND SPRING
Assures safe operation even when a blade breaks
RBI EXCLUSIVE! NEW PATENTED HOLDDOWN FOOT
Maximum control for when you're making the most intricate cuts
RBI EXCLUSIVE! EXTRA-LARGE CAST ALUMINUM TABLE
Gives a larger work area in front of centrally located blade for better control & support of your work while sawing
ALL CAST AND MACHINED PARTS
Durable construction that lasts a lifetime—no plastic parts
PRECISION-CRAFTED STEEL BASE & HEAVY-DUTY STEEL LEGS
For smooth, vibration-free operation
RBI EXCLUSIVE! ADJUSTABLE TILTING WORK TABLE
Tilts full 45° left or right unlike other scroll saws that only tilt one way
FLEX BELLOWS
Keeps work area clear for better visibility & added safety
TEFC INDUCTION MOTOR
Totally enclosed & fan-cooled to cut maintenance costs & time, as well as protect against damaging dust
MADE IN THE U.S.A.
An American-made precision tool built to withstand years of use
SELF-LEVELING SHOCK-ABSORBING FEET
Keep your Hawk steady while in use

According to the Editors of WOOD®, "RBI 220VS & 216VS Scroll Saws rate EXCELLENT OR GOOD in all areas tested."
—WOOD Mag. Sept. 91—
Scroll Saw Article

RBI was the only manufacturer to have all models tested rate "EXCELLENT" in Vibration—Speed Control—& Quality of Cut from that same review by the editors of WOOD Magazine.

C28

All this adds up to—

THE BEST REASON OF ALL...
Whether for pleasure or profit the **rbi** Hawk is the perfect tool to begin or complement any home or professional workshop. When quality matters—the **rbi** Hawk is your best choice.

Call today for your **FREE Info Kit – 1-800-487-2623.**

rbi industries, inc.
The American Toolmaker

P.O. Box 369
1801 Vine Street
Harrisonville, MO 64701

10" TABLE SAW

*EN-TB10
- 1-1/2HP 110/220V
- CAST IRON TABLE

REG: $350.00
SPECIAL: $335.00

10" HEAVY DUTY TABLE SAW

*EN-HTB10
- 3HP 220V
- TRIPLE V BELT DRIVE, 5/8" ARBOR
- SOLID CAST IRON TABLE+WINGS
- PRECISION FENCE + MITRE GAUGE

REG: $1,190.00
SPECIAL: $1.135.00

12" PLANNER

EN-PN12
- 1HP 16 AMPS 110V 16,000 CPM
- 2 BLADE CUTTERHEAD
- 26.2 FPM FEED RATE

REG: $380.00
SPECIAL: $355.00

15" PLANNER

*EN-PN15
- 2HP 110/220V 15 AMPS 220V
- 2 SPEEDS, 13,500 CPM
- 3 BLADE CUTTERHEAD
- STAND INCLUDED

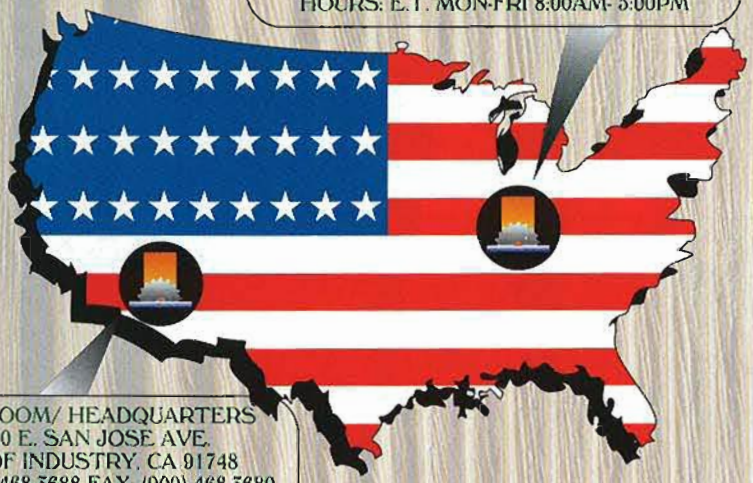
PRICE: $795.00

WOOD SHAPER

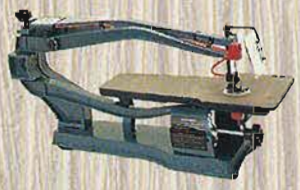
*EN-WS05
- 1HP 16 AMPS 110V
- REVERSIBLE MOTOR
- CAST IRON TABLE
- 1/2" SPINDLE

REG: $280.00
SPECIAL: $265.00

SHIPPING WAREHOUSE/ SERVICE CENTER
12 ARMORY ROAD, CLARKSBURG, WV 26301
HOURS: E.T. MON-FRI 8:00AM- 5:00PM



SHOWROOM/ HEADQUARTERS
19400 E. SAN JOSE AVE.
CITY OF INDUSTRY, CA 91748
TEL: (909) 468-5688 FAX: (909) 468-5689
HOURS: P.T. MON-SAT 8:00 AM-5:00PM



22" SCROLL SAW

EN-SC22
- 1/8HP MOTOR
- SINGLE SPEED 1,725 SPM
- 22" THROAT, 2" MAX CUT

REG: $150.00
SPECIAL: $145.00

HEAVY DUTY WOOD SHAPER

*EN-WS10
- 3HP 22 AMPS 220V
- 3/4"+1" SPINDLES
- 3" SPINDLE TRAVEL (1/2" SPINDLE AVAILABLE)

REG: $860.00
SPECIAL: $845.00

ENLON™

ORDERS 1•800•888•9697

Pacific Time: Mon-Sat 6:00am to 5:00 pm

3H.P. DUST COLLECTOR

*EN-DC30
- 3 HP 220 V 22AMPS
- 1850 CFM
- INTAKE HOLES: 3 @4"

REG: $455.00
SPECIAL: $450.00

16" BAND SAW

*EN-BS16
- 1-1/2 HP 110/220V 3 SPEEDS
- CAST IRON TABLE
- RIP FENCE & MITRE GAUGE INCLUDED

REG: $520.00
SPECIAL: $490.00

18" HEAVY DUTY BAND SAW

*EN-BS18S
PRICE: $645.00

18" SUPER HEAVY DUTY BAND SAW

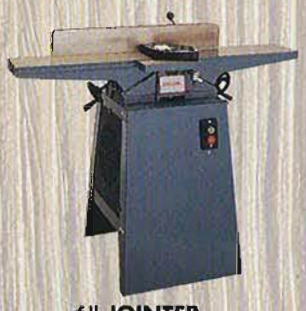
*EN-BS18
- 2HP 110/220V 11 AMPS 220V
- 3,300 FPM BLADE SPEED
- RIP FENCE & MITRE GAUGE INCLUDED

REG: $910.00
SPECIAL: $880.00

6" X 9" BELT/DISC SANDER

*EN-SN69
- 3/4 HP 110/220 V
- 6" X 48" BELT,9" DISC
- TABLE TILTS: 0°-45°, BELT: 0°-90°
- WITH GAUGE

REG: $195.00
SPECIAL: $185.00



6" JOINTER

*EN-J006
- 1HP 110/220V 14 AMPS 110V
- CAST IRON TABLE
- 13,500 CPM
- 3 BLADE CUTTERHEAD

REG: $340.00
SPECIAL: $300.00

8" HEAVY DUTY JOINTER

*EN-J008
REG: $675.00
SPECIAL: $635.00

WELCOME TO OUR SHOWROOM
Call for free catalog.
Prices are subject to change without notice.
* F.O.B. CITY OF INDUSTRY, CA or CLARKSBURG, WV

VISA MasterCard